AMERICAN CINEMATOGRAPHER

The Motion Picture CAMERA Magazine

this issue

American Society of Cinematographers
Optical Printing and Technique
Employment Factor in A.S.C. Plan
Photography of the Month
. . . and Other Features



home movies

The Family Newsreel
How About the Eight?
Looking For Local Color
Pardon My Pups
Backyard Movie Winners

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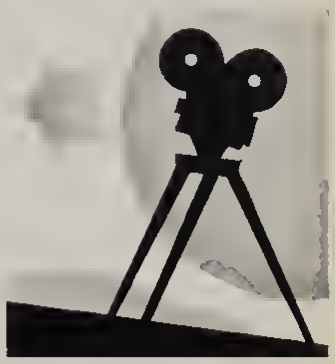
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- Part 2 of the Optical Printer and its use in the studio today as told by Lynn Dunn, A S C., will be one of the outstanding features of our next issue
- A discussion of Effect Filter by George Scheibe, well known Hollywood manufacturer of Filters
- Economies of Process Photography by Farcio Edouart, one of the foremost cinematographers in this branch of work in the Hollywood studios
- There will be other interesting contributions on the technical phases of cinematography

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THE AMERICAN SOCIETY OF CINEMATOGRAPHERS was founded in 1918 for the purpose of bringing into closer confederation and cooperation all those leaders in the cinematographic art and science whose aim is and ever will be to strive for pre-eminence in artistic perfection and technical mastery of this art and science Its purpose is to further the artistic and scientific advancement of the cinema and its allied crafts through unceasing research and experimentation as well as through bringing the artists and the scientists of cinematography into more intimate fellowship. To this end its membership is composed of the outstanding cinematographers of the world, with Associate and Honorary memberships bestowed upon those who, though not active cinematographers, are engaged none the less in kindred pursuits, and who have, by their achievements, contributed outstandingly to the progress of cinematography as an Art or as a Science To further these lofty aims, and to fittingly chronicle the progress of cinematography, the Society's publication, The American Cinematographer, is dedicated

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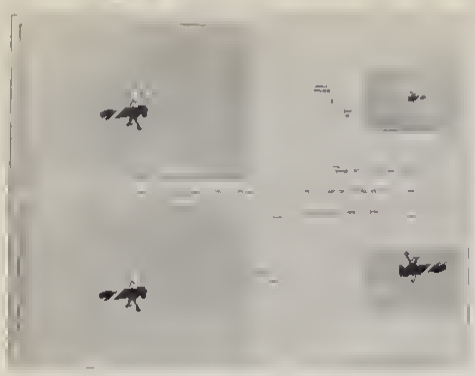


Illustration No 1

Application of Leica Lens

By
Clarence Slifer, A.S.C.

MANY cameramen have rightly termed the Leica camera, the universal camera One of the essential features of this camera is the interchangeability of its lenses Eleven lenses are available and they cover a wide range of focal lengths and apertures

The miniature camera novice should not become confused and presume that in order to enjoy the full advantages of the miniature camera, it is necessary to employ all eleven lenses This large variety of lenses is provided to meet the personal tastes and requirements of both amateur and professional cameramen

Some miniature camera enthusiasts prefer to use only one lens on their Leica, for they feel that this is the limit of their photographic ability Other cameramen bubbling over with enthusiasm "buy the works" Due to their lack of sufficient photographic knowledge, they suffer from an over indulgence in photographic equipment

By the better understanding of your camera lenses and their applications, more satisfactory pictures will be obtained, it will also add immeasurably to your enjoyment of picture making From the standpoint of the user there is nothing mysterious about lenses or their uses The novice should remember that lenses are measured by only two scales, focal length and aperture The focal length of the lens controls the angle of view and the size of the photographic image The aperture of the lens governs the amount of light that is admitted to the photographic emulsions Lenses that admit a large amount of light are commonly called fast lenses (because they permit the making of photographs at high shutter speeds)

In illustration No 1 the effect of the focal length of a lens upon the size of the photographic image is shown in exaggeration A and B represent two lenses of different focal lengths, C represents the object (autogiro in flight) which is identical in both cases. D and E represent the resultant pictures made with the two lenses Notice that the short focal length lens embraces a wider angle of view, but that it gives a smaller image of the autogiro While the

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Illustration No. 5

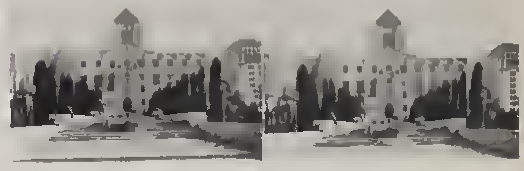
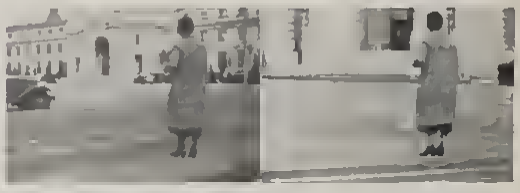


Illustration No. 4



At Right Illustration No. 3

At Bottom Illustration No. 2





Employment in A. S. C. Plan Vital Factor

BASED on and conceived in the present economic trend and the industrial readjustment that is struggling toward an equilibrium, and applying those principals on which the American Society of Cinematographers was founded, that organization has added as an important part of its widened activities, for the benefit and betterment of its members, a department of employment

This agency was engendered in the thought and fostered in the principal that as a Society it operate not only in the field of science and research, but that it initiate as one of its activities —that looks toward the human side of its members—a force which would have the concerted and combined power of its large and representative membership to give the individual that much needed assistance which is now a peculiar part of the times and prevalent conditions

Through the history of the motion picture industry those creative artists who have entrusted their business activities to men versed in the business world—to men who have an intimate knowledge of contact, contract and employment conditions— those artists have found that their material condition and existence was greatly benefited These agencies have left the creative mind free to concentrate its efforts on the task of building and conceiving the important artistic details that have brought pictures to the high level they have reached

As operated by the American Society of Cinematographers this move has a two fold economic side It betters the condition of the individual cinematographer; it places him in the plane of creative artists, and because the Society operates as an individual unit with no entangling alliance, its financial problem is at the absolute minimum.

It employs only one executive head, it pays no financial tribute beyond its own operative forces; it recognizes no foreign authority either in a moral or financial sense It also concentrates its forces, its thought and all of its activities toward the welfare of Cinematography and Cinematographers

The launching of this constructive agency has been hailed by the cinematographer, whose vision has not been introverted, but who can glimpse the lasting benefits to him as an individual and to the craft as a whole, as a movement which has been cradled in a constructive motive and an agency whose potentialities and benefits can redound only to the credit of the entire craft

Contracted and non-contracted members have entrusted their business problems as they are related to their work in the studios to this newly formed department. They acknowledge its power, its assuming of a responsibility that was sometimes beyond the scope of the individual, they recognize in it a medium that is possible only through such an organization as the American Society of Cinematographers, whose purpose has never reached out for autocratic powers, but whose sole aim has been the welfare and betterment of the Cinematographer

Recognizing the importance of the recent five year contract negotiated by the society with the major studios, together with the fact that the independent producer consults that organization on its cinematographic problems, the American Society of Cinematographers is acknowledged a potent force in the employment situation



Photo by Frank Tanner A.S.C.

By checking this photo with the resume at the end of this article you will note it falls under the following classification under the heading LINE Short Sharp curves, Oblique lines and Acute angles. Under tone it would correspond with Extreme Key while under design it would fit Rhythm and Informal Balance.

The "Language" of Design

By

L. Owens Huggins, A.S.C.

IN OUR two previous articles we have considered "The Language of Line" and "The Language of Tone." There is an infinite variety of ways in which line and tone may be combined. The rules of Design tell us how to combine them to achieve the effects we desire. The object of Design is beauty and expressiveness, and the elements of beauty, which are apparently unanalyzable, are achieved through the application of the laws of Design.

Among the elements of Design are the following:

RHYTHM.—Rhythm is a system of accentuating certain elements in design to produce the visual equivalent of measured movement as in dancing or music. It is also an arrangement of lines, masses or tones to form a connected path along which the eye may travel from one point to another. Rhythm thus conveys the idea of motion to the eye, compelling it to follow in a definite direction, it contains therefore the sense of change or progression. Rhythm is also accomplished through the repetition of the same motif at regular intervals. This is one of the oldest forms of design, and was used by the ancients in architecture, dress, pottery, etc. Here is another tool by which we may express certain thoughts or moods. As we have suggested, Rhythm implies a feeling of movement, energy, activity, vivacity. Conversely, lack of Rhythm will produce a sense of inertness, passiveness, lifelessness, stagnation.

BALANCE.—Balance is static, and produces a sense of rest or cessation of movement. There are two kinds of Balance—Formal and Informal. In the first (Formal), the masses, lines and tones on both sides of the picture are exactly alike, and therefore have the same power of attraction to the eye. This is the equalization of forces, in other words, masses of equal size and interest are placed on both sides of the picture. The human body is an excellent example of Formal Balance. Here we have a method by which we may suggest formality, stateliness, conventionality, symmetry, precision. The second type (Informal Balance) is always achieved through the use of different masses on both sides of the picture. These masses differ in their ability to attract attention because of differences in size, shape, tone or interest. But regardless of the fact that both sides of the picture are different, they must balance in some respect: for instance, a large mass of comparatively little interest is placed on one side and this is balanced by a much smaller mass of greater interest on the other. This method of Balance leads to greater unconventionality and variety, and in extreme cases may give a sense of the eccentric and fantastic.

PROPORTION.—Proportion is the relationship of sizes of masses, depth of tones, length of lines, and importance of interests between the parts of a composition and the whole. In other words, it is the Law of the Inter-relation of Parts. Large masses speak of simplicity, directness, boldness. Smaller masses and lines suggest greater uncertainty, as it takes the eye more time to see and analyze the separate parts.

PATTERN.—Pattern is the regular distribution of these masses, lines, shapes and tones.

OPPOSITION.——Opposition is the joining of lines at right angles, or the contrasting of large masses to small ones, long lines to short ones, light tones to dark ones, breadth to height, in order to obtain strength, variety and interest.

TRANSITION.—Transition is the softening of the severity of these contrasts, by the use of connecting lines, masses of intermediate sizes, tones of intermediate value, etc.

EMPHASIS.—Emphasis is the art-principle by which the eye is first carried to the most important feature in any composition, and from that point to every other detail in the order of its importance. Emphasis is achieved by the use of lines leading to a certain point, by position in the picture-space, by difference in the tone of the point of interest from its surroundings, by unusual or unexpected shapes, lines, etc., and by selective focusing (as in a photographic portrait, where the features are sharp and the background out of focus). Emphasis is a most important tool, enabling us to single out one object among many and center the attention on that.

SUBORDINATION.—Subordination is the reverse of Emphasis. Its purpose is to eliminate interest from certain parts of the composition in order that Emphasis may play its proper role. Examples are the subordination of branches to the trunk of a tree, of spokes to a wheel, of side doors

(Continued on Page 472)

Improved Camera Crane

By **William Stull, A.S.C.**



The new General Service Studio camera-crane. Dwight W. Warren, A.S.C., Chief Cinemetegrepher for Educational Studies, and Director Charles La Ment are riding the boom. Below, left to right: Victor Raby, builder of the crane; Jack C. Baker and Carl Jensen, the designers. As will be seen, one man can operate the device, despite its weight of over six tons.

A NEW camera-crane, one of the largest in the industry, has recently been placed in use by the General Service Studio. Not only is the new boom one of the largest of its type in use, but it includes several improvements in design and equipment which make it one of the most practical equipments of its kind.

The new crane was designed by Jack C. Baker, of the studio's Mechanical Design Department, and Carl H. Jensen, a well-known Los Angeles Consulting Engineer. It was fabricated entirely in the shops of the General Service Studio, and represents an unusual example of speed in the design and fabrication of so large and intricate a machine: the preliminary drawings were started in December, 1933, and the crane was finished and ready for use before the middle of February. The first production upon which the new crane is being used is the Harold Lloyd picture, "Cat's Paw," photographed by Walter Lundin, A.S.C.

In general appearance, the new crane is similar to the majority of the large cranes already in use, though exceeding them in size by a yard or more. It is hand operated, in accordance with the general practice, and adapted for use either on the stage or as a trailer on road or street. It is does not need to be loaded on a truck for transportation, being equipped with running-gear which permits the crane to be towed anywhere like an ordinary trailer.

The running-gear consists of four truck wheels, with heavy-duty pneumatic tires. All four wheels are steerable, though the two rear ones may be locked in the straight position for transport. Four-wheel, hydraulic brakes and Timken roller-bearings are fitted.

The spring-suspension is of the L. & E. type, consisting of two pairs of transverse springs at each end of the chassis. These springs take the place of conventional axles, and allow individual action by each wheel, exactly the same as the "knee-action" springing in many current automobiles. The suspension system was designed and built by Lundelius and Eccleston, of Los Angeles.

The chassis of the crane is a conventional square truss of steel I-beams. Upon this chassis is fitted the mounting for the crane itself: this mounting may be levelled independently of the angle of the chassis, by means of four screw-jacks, one at each corner of the false frame between crane and chassis. In the centre of this false frame, resting on a massive bronze ball-joint, is a short, vertical steel tube, fitted with a heavy ball thrust-bearing, which serves as the horizontal axis for the crane's rotation. Upon this is a U-shaped steel saddle, in which the crane arm is fitted, and which serves as the axis for the arm's vertical movement.

The crane-arm itself is of Duralumin, in the usual bridge-truss form. From its axis to the end at which the camera is placed, the arm is 24½ feet in length, exceeding by nearly three feet, it is said, the length of any comparable camera-crane. Beneath the arm, at the fulcrum, is a bronze sector, at present used as a bearing for the friction brake, ultimately, it is planned to cut gear-teeth in this sector, mashing with a driving-gear, so that the arm may be raised or lowered by one man, operating a crank or wheel.

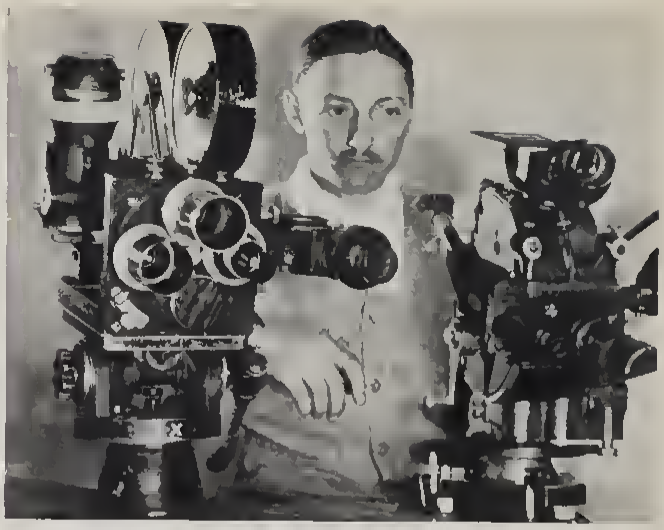
As is usual in these booms, the weight of the long crane-arm, the camera, cameramen, etc., is counterbalanced by lead weights placed in a receptacle on the short end of the arm. However, in this design, a new feature has been introduced: instead of merely placing a number of weights in a retaining box, and securing an approximate balance, the designers have utilized the familiar principle of shifting weights, to secure a highly accurate balance. A fixed weight is placed at the short end of the arm, as in conventional practice, but the actual balance is adjusted by means of a sliding weight-box moving on the top of the arm. In this box is kept a standard weight, which may, in case of need, be supplemented by additional weights. The box is fitted with rollers along its bottom, which serve as wheels or bearings for its travel. It is moved in and out from the end of the arm by means of a helically-cut shaft, or worm, which passes through the box. This helix is rotated, through a bevel-gear drive and a shaft and crank, from the under-side of the arm. This drive is so located that both it and the anticipated raising gear may be worked from a central position, by a single operator. This method of counterbalancing is so accurate that the boom may be operated, with any load, by a single man. Obviously, it permits far speedier and more accurate counterbalancing of any load than is possible with existing methods, its use should result in greatly improved efficiency in the making of crane shots.

The head which carries the camera is, essentially of conventional design. An L-shaped base is pivoted to the end of the boom-arm, and kept level by two tubular radius-arms. Upon this is pivoted the principal camera-mount, which carries the camera (with or without a blimp) mounted on a standard friction pan-and-tilt head, seats for two cinematographers, and mounts for two lights. A third light

Continued on Page 474)

Improvising for the Newsreels

By
Ray Fernstrom, A.S.C.



Ray Fernstrom, intrepid newsreeler and raconteur, with a Mitchell camera to his right and an Akeley to his left, rigged out specially by him for air work.

ONCE a year the Los Angeles newsreel boys wind up their football coverage with the famous East-West Rose Bowl contest in Pasadena. This year on New Year's day it rained for the first time in the history of this great national event. And this year I worked with that old go-getter Mervyn Freeman, helping to add scenes to his usual thorough coverage for Universal Newsreel. We were set up on the top of the bowl along with the rest of our troupe from the competitive reels. The rain came down on our heads, on our cameras and into the complicated device that is known as a view finder. This one in particular is made up of a number of lenses, prisms, ground glass and a million screws. In good weather this results in a clear upright magnified image of whatever the camera is pointed at and covers the field seen by each of the various lenses used.

As the game progressed the rain slowly seeped in among the nice shiny pieces of glass, onto the inside walls of the finder and onto the bottom, giving off a fine fog that slowly obliterated any view of the game. With a long telephoto lens in the camera, our ability to follow the fast action of the players grew rapidly less. Here was a case of "improvising" while the camera still worked. Reaching into the lens case we found a couple of ordinary paper clips. These we bent so that the ends could be stuck into crevices on top of the camera. The outer ends we bent into the near shape of the field covered by our lens. Sighting through our rifle sights we luckily kept a pretty good "bead" on the game until the end of the half, when we had time to take the real finder apart and wipe off the dew. When we later saw our efforts on the screen, only one scene was a little off center. Oh, the luck of the newsreel men!

Speaking of Merv Freeman reminds me of another story. I pumped out of him, that shows even better how far in improvising a newsreel cameraman has to go in order to ALWAYS GET THE PICTURE. Merv was strapped to the periscope on the outside of a submarine once. He insisted on getting a scene that was to look on the screen as if it were shot through the periscope as the sub made a dive. Once fastened on the "pole" he found it impossible to pan or tilt his camera. Here was a tough break. Kicking frantically at the steel tubing as his feet and body submerged he finally succeeded in giving a signal to the officers inside the conning tower. Up to the surface came the sub and soon a head came up out of the hatch cover to find out the trouble. After some discussion, Freeman, dripping wet, asked for a set of head phones and mouthpiece so that he could give directions to the sub commander, pointing the sub when he couldn't point his camera.

Thanks to his insistence and ingenuity he got his picture and a thorough soaking as well, since he did not give the order to rise until his neck was down to the level of the blue Pacific.

In contrast to this he told me about making a shot from the Goodyear blimp. Merv, a hound for odd angles, wanted a shot from way back in the gondola looking forward over the shoulders of the pilot and out through the forward windows at the boat race he was covering. Once set up back there in the cramped ballast bin, he tied his camera down with sand bags and asked for a straight dive at the pulling crews in the long thin shells that were cutting thin furrows in the Olympic basin below. From a thousand feet they dove, down, down to nearly a mere hundred, with Merv on his nose. Three times they tried it on different races. Here too was a case of pointing the ship at the "picture" when there was no possibility to direct the camera. The close quarters and small windows prevented any semblance of this.

There is no cameraman in the newsreel business to whom quite so many stories are attached as Joe Johnson, veteran of many years, on the staff of Paramount News.

It is a rare occasion when Joe will give you a yarn first hand, but here is a Lulu. Back in 1919 when Joe was covering for Pathe News, he got a hot tip that Elsie DeVillers was going up for a record parachute jump. That was back in the days when lady jumpers were a real novelty, and novelty is news. So off Joe went to the flying field after ordering a plane from which to shoot. All the competitors from the other newsreels were there eager for action, everything in readiness, except Joe's plane. He stalled the others until they would wait no longer. One after the other the competitors' planes took the air. Just as the last one left, Joe's ship landed. In hopped Joe, no time to tie in his camera, and found himself high in the sky before he realized nothing was at hand to fasten his camera to the plane. Suddenly he membered his leather belt that held his pants up. It became a case of losing his trousers or

(Continued on Page 473)



PHOTOGRAPHY of the MONTH

"BOLERO"

Paramount Production

Photographed by **Leo Tover, A.S.C.**

Based on the life-story of a famous dancer, "Bolero" differs from the usual treatments of this theme in having a star who can actually dance, accordingly, the camera-treatment of the dancing sequences is greatly benefited Instead of having to "cheat"—that is, use doubles for the few long-shots, and suggest dancing with close-ups of a non-dancing star—Cinematographer Tover has been able to show the dances fully He has made them extremely interesting examples of this type of cinematography The "Bolero" number, especially, is unusually well handled, Tover's camera-treatment, lighting, etc , are really on a par with Ravel's astounding composition, which is used in the accompanying score The opening shot of the second portrayal of this dance is particularly effective—one of the few really justified crane-shots seen recently.

Tover's handling of the dramatic portions of the film is also good, even though not so spectacular as his treatment of the choreographic sequences He has treated his players very kindly giving George Raft something of the sleek screen personality of Valentino—a surprising, abrupt change from former treatment; Carole Lombard has seldom been shown to better advantage, despite the difficulty of strange, pre-war costumes Sally Rand has also been photographed beautifully—and her fan-dance is a pictorial gem The Paramount Sound Department deserve high praise for the excellent recording of the musical score, which is unusually fine recording

"NANA"

Samuel Goldwyn Production

United Artists Release

Photographed by **Cregg Toland, A.S.C.**

In this production, a highly-publicized Russian star—Anna Sten—makes her bow to American films In her previous, foreign-made films, she was shown as an unusually fine actress, but a none too photogenic screen personality In "Nana," however, Cinematographer Toland has literally given her a forceful screen personality His lighting and photography stamp her immediately as a screen "find"—perhaps the discovery of the year In many quarters, the credit for this is given to Producer Sam Goldwyn and Director Dorothy Arzner it cannot be denied that both deserve the highest praise, for it takes the highest type of cinema-mindedness to produce and direct such a picture, and to make a new star, but without the inspired camerawork which literally made Miss Sten a magnetic screen personality, all other effort would have gone for naught

Viewed strictly as photography, "Nana" is well up to Toland s high standard Not only are there many individual scenes and sequences of great merit, but the atmosphere of the period—the late 1860 s—is perfectly recreated This was difficult for the architecture and costumes of the period, and its innate atmosphere, lend themselves badly to photographic pictorialism Adhering to the tenets of good cinematography, while at the same time holding to the spirit of the period, is a fine and difficult achievement. Cinematographer Toland has in "Nana" a film of which he may well be proud

"SUCCESS STORY"

RKO Production

Photographed by **Henry W. Gerrard, A S.C.**

This picture shows Cinematographer Gerrard working in a style radically different from his recent films—a harsh, brittle mood, as different from his recent work as night from day, but excellently keyed to the dramatic mood of the story Gerrard's camerawork is as deft as ever, despite the change in mood, and plays an important part in building up the peculiar emotional response of the story It is particularly interesting to note the manner in which slight changes in makeup and photographic treatment accentuate the transition of Douglas Fairbanks, Jr , through the course of the action, from an uncouth young gangster to a polished business-man The print seen in preview was extremely poor, making it very difficult to give photography fair consideration

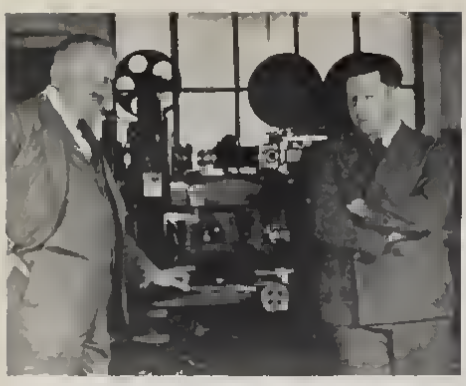
"NO MORE WOMEN"

Charles H Rogers Production for Paramount

Photographed by **Harry Fischbeck, A.S.C** , and **Theodor Sparkuhl, A S.C.**

Photographically, ' No More Women" is of a decidedly higher order than might have been expected of the latest of the rowdy McLaglen-Lowe series Although played primarily for comedy, and laid against the rough background of the San Pedro waterfront and the operations of the salvage fleet, the film shows, none the less, much fine camerawork The outstanding feature, of course, is the underwater camerawork, showing the divers at work These are unusually interesting, well handled, and often most pictorial Some of the other scenes, as well, are photographically interesting There are many effective angle-shots about the salvage-boats, both at sea and in the harbor, one scene showing them returning to port—photographed through a fisherman's seine—is very striking Another scene—showing one of the many battles between the two stars—is a fine example of camera-minded direction it is played entirely in the dark, with an occasional figure momentarily silhouetted against a small window, it appeals to the imagination far more than any actual fighting—suggesting a real conflict of Titans

The fight on the roller-coaster provides an outstanding thrill, and is a great success for Farciot Edouart, A S C , and his special process staff It is one of the most realistic examples of process work seen in a long time, and an outstanding thrill



At left, Vernon Walker, A.S.C., head of RKO Special Effects Dept. At right, Lynn Dunn, A.S.C., first assistant to Mr. Walker.

Optical

OPTICAL Printing, or "Projection Printing," as it is sometimes called, is a process of rephotographing at approximately unit magnification, from one motion picture film to another. The apparatus used for this work is almost invariably specially designed and built, and consists essentially of a standard motion picture camera, fitted with a registration movement, facing a printer head, likewise equipped with a registering or 'pilot-pin' movement, and mounted on a rigid lathe-bed. With the one exception of speed of operation, this method is by far the most satisfactory of all motion-picture printing methods. Full control of the original film and the raw stock is possible at all times, and the process is subject to an almost infinite degree of modifying manipulation.

Optical printing is utilized for an endless variety of work. Duplicate (or "Dupe") negatives may be made of a positive film when the negative is not available or when a new negative is wanted, scenes which are unsatisfactory in action or quality can often be salvaged, many shots formerly made in the camera——such as fades, dissolves, matted shots, and double-exposure or "split-screen" and composite scenes—can now be made on the optical printer. Moreover, an entirely new range of trick effects, such as "Wipe-offs," Trick Transitions, and the like, have been made possible by this device. In a word, the optical printer is called upon to do almost everything in the line of "dupe" frick photography. For that reason, it is generally considered as the backbone of the trick camera department. Regardless of whether or not a production includes any of the generally accepted forms of special-effects camerawork, it is certain to include a considerable footage of optically printed film, I would venture to say that during the past four or five years there has not been a single production released that did not utilize the services of the optical printer to a considerable extent.

Unfortunately, the average production cinematographer's knowledge of optical printing seems more or less limited. He knows the principle of it, to be sure, but he usually knows little of how much film from his production goes through the process, or of the many steps involved in it. He becomes very conscious of it, however, when in viewing a preview of his picture he finds some bad jumps in contrast or quality where the dissolves are cut in. His immediate reaction is usually to condemn the man in charge of the work. Limitation of his knowledge on the subject causes him to give little thought to the many steps involved between the time when the exposed dupe negative is delivered to the laboratory and when he views the shot on the screen, cut into his picture. While he keenly appreciates the extent to which laboratory manipulation may influence his own work, he does not stop to consider that it must logically play an even greater part in the success or otherwise of optical printer work. In my own estimation, the laboratory work is responsible for not less than half of the success or failure of optical printing. Unless the man in charge of optical printing has full control of every step in the making of a dupe negative, he should not be held entirely responsible for the quality of his work. It should be remembered that where in regular production cinematography the laboratory is a factor in three basic steps, i.e., the development of the original negative, the making of the print, and the development thereof, in optical printing the laboratory is a factor in no less than six such steps: the development of the original negative, the making of the duplicating positive, the development of the duping positive, the development of the duped negative, the making of the final print from that negative, and the development of that print. Obviously, the margin for laboratory errors is rather more than doubled, and successful results indicate an extremely high degree of laboratory cooperation.

Consistency is of course the most important consideration in quality optical printing. When once a satisfactory system of duping is worked out to fit the conditions and equipment at hand, the consistency of the laboratory work is the greatest single factor in obtaining continuous good results. To my mind, granting that the printing equipment itself is satisfactory, the making of the lavender duping print is of the greatest importance in securing good dupes. Needless to say, without a good print, duplication of the original negative is next to impossible. A slight variation from the proper contrast in the lavender print can be compensated for in the exposure and development of the dupe negative, or by change in the duplicating raw film used. But this, of course, means variation from the set system which has been worked out, and uncertainty as to the ultimate results.

Every man doing this type of work has to contend with certain definite sources of difficulty. If he can reduce these to a single source, and concentrate his attention upon this one, he will find that his results become more satisfactory. In my own work, I find that my greatest single source of worry is to get the prints from my dupe negative to match the original. If these prints do not match, the complaints are not long in coming. Although I may know that the dupe negative is perfect, the producer, director, and some others usually judge by what they see on the screen. If the dupes can be normally printed to match in the working print, a perfect match in the master print can be demanded. In the RKO Camera Effects Department, this evenness is maintained by obtaining from the film editor samples of his original positive from the scenes to be duped. These samples are systematically filed, and sent to the laboratory with the dupe negative for print matching purposes. This system also aids in checking for light-changes and variation in contrast.

To maintain the necessary consistency in the quality of the work done for a large studio, as much latitude as possible is necessary in the two major steps. These steps—the making of the duping print and the development of the dupe negative—must have great latitude in order to take care of any variation in film, positive and negative developer, and optical printer light and speed. This last factor, however, is of little trouble when one has proper checking facilities such as a photocell photometer and a tachometer. We have found that a duping print reproduces best when

Used in 7 out of 8

American Pictures in

"1933's TEN BEST"

OF THE Ten Best Pictures of 1933 chosen in the *Film Daily's* poll, eight were American productions. Of those eight, seven were photographed on Eastman "Gray-Back." This is outstanding evidence of the acceptance enjoyed by Eastman Super-Sensitive Panchromatic Negative among cameramen and producers . . . and a signal tribute to the versatility and unfailingly high quality of the film itself. Eastman Kodak Company, Rochester, N. Y. (J. E. Brulatour, Inc., Distributors, New York, Chicago, Hollywood.)

EASTMAN *Super-Sensitive Panchromatic Negative* (Gray-Backed)

WHEELS OF INDUSTRY

Rolleicord Camera

• According to an announcement from Burleigh, Brooks, Franke & Heidecke, maker of the Rolleiflex Camera, they have placed another edition of that well known instrument on the market under the name of Rolleicord Camera

According to specifications this camera has a narrower distance between lenses, is compensated for Parallax, round focusing knob with metre scale, rigid focusing mechanism, one lever compur shutter for both setting and releasing, frame finder for sport pictures, and other adaptations for filters, etc

16mm Negative and Positive

• With the establishment of processing plants in various parts of the country by independents for the developing of negative and positive 16mm film, seemingly this type of amateur work is gaining more headway

With Fotoshop in New York City opening a department for this work and Dunning Process Company in Hollywood specializing in a fine grain 16mm development and printing, the first steps toward popularizing negative and positive seem to be under way

Leica in Science Booklet

• A handy pocket size booklet has just been issued by E Leitz, Inc, of New York on the use of the Leica Camera for Macro and Micro photography It was authored by Willard D Morgan

It is a 68-page booklet selling for 25 cents and covers many phases of the use of the Leica in science industry and education It gives methods, tables and accessories needed and available for this type of photography

Victor Repair Department

• This month the Los Angeles branch of the Victor Animatograph Company which is under the guidance of C H Ralke, will install a repair department to take care of all coast activities.

The home office in Davenport has sent a specially trained man from the factory to rave charge of this new department

New Filmo Model

• Bell & Howell Company makes the important announcement of a 16mm magazine-loading motion picture camera, light in weight, low in price, and rectangular in shape—entirely different in appearance from any camera previously made by this company, but embodying the traditional Bell & Howell features of fine



design and rugged, precise construction This new camera has been christened Filmo Model 121

The magazine-loading feature makes for instantaneous loading You just slide in a 50-foot film magazine, close the camera door, and the camera is loaded

Filmo 121 is only 2¼x3½x5¼ inches in size and weighs about two pounds

There are two viewfinders One is a direct-sight finder (spyglass type) affording a large and brilliant field The other is a waist level finder of the reflecting type used on still cameras

Two speeds, 16 and 24, are provided for, as are single frame exposures A downward pressure on the starting button puts the camera in operation at 16 or 24 speed according to the setting of the speed control lever An upward movement of the starting button exposes a single frame This provision opens up many interesting possibilities in animation work

A Cooke 20mm F 3 5 universal focus lens is standard equipment However, a Cooke 1-inch F 1 8 lens, suitable for both black and white or Kodacolor movies, can be supplied, either with or without Kodacolor filter

An exposure chart covering all outdoor light conditions, seasons, subjects, and hours of the day is built into the new camera's side There is an accurate film footage dial and a permanently attached, folding winding key

The shutter is of a unique and distinctive type with oscillating action—motion picture's closest approach to the focal plane shutter of a still camera This affords an unusual sharpness of image. The exposure time at normal speed is approximately one thirty-fourth of a second

New Victor Model 3

• According to Victor Animatograph Corporation, Davenport, Iowa, the new 1934 Model 3 Victor Camera has been designed and priced to dominate the moderate priced camera market

One of the most noticeable improvements in the Model 3 is the addition of a convenient attached winding crank The camera has five operating speeds (including S-L-O-W-E-R Slow Motion) Other features include Duplex twin-mounted spring motor, cushioned control, variable tension for different operating speeds, built-in exposure guide, self-setting film footage scale, multiple-field view finder with visible level (to prevent unintentional side tilting of camera), and provision for hand cranking

Standard lens equipment consists of the f 2 9 one-inch Universal Focus Dallmeyer Triple Anastigmat Lenses of other makes and specifications can also be supplied, as can Kodacolor equipment All standard 16mm cine lenses are interchangeable on the camera

Earlier models of this same camera have been extremely popular with movie makers in all parts of the world The original Model 3 was priced at $125 00, whereas the new improved instrument, with many additional features and more beautiful appearance, is priced at only $72 50

Embodying the many refinements listed above and the fine craftsmanship which is characteristic of Victor products, the Model 3 at its present attractive price promises to be the outstanding camera value of the year



Photo by H W Voss

HOME MOVIE SECTION

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• PROFESSIONAL Criticism of the Amateur picture is a part of the service offered by the AMERICAN CINEMATOGRAPHER. Many are not aware of this Hundreds of pictures have been reviewed this past year by members of the American Society of Cinematographers for the Amateur.

Next Month . . .

• The response to our offer of [illegible] feet of Panchromatic 16mm Film Free for Home Movie Continuities has been unprecedented Next month there will be another installment of these winners

• There will also be another outstanding plot that you can shoot around your home

• Technical side of Picture Making will be touched upon, giving you the lowdown on how to do it

Sound for Home Movies

By

William Stull, A.S.C.

THE amateur of today is in virtually the position of the professional showman of six or seven years ago. At that time, it will be recalled, sound suddenly appeared. Sound—of any kind—became a desirable feature of any programme. Yet the regular "Vitaphone" and "Movietone" equipment (for showing, respectively, talking pictures synchronized to disc and film recording) was almost prohibitively expensive. Therefore many exhibitors continued to play silent pictures, providing musical accompaniments and sound-effects by non-synchronous reproducers. This was done by using two turntables, each equipped with an electric pick-up, and feeding into a common amplifying and reproducing system, a "fader" was included, by which sonic lap-dissolves could be made from one record to another, with the volume of the piece being played diminishing as the volume of the succeeding piece increased. Many theatres built up sizable libraries of sound-effect records, using both the 33 1/3 R P M. sound-and-broadcast standard record, and the 78 R P M. commercial phonograph records. In due time, as synchronous sound-equipment became more economically available, the theatre men added it, or, in some cases, adapted their non-synchronous equipment to synchronous reproduction.

The amateur can well do the same.

Essentially, the situation is the same. Sound-on-film reproducing equipment is available—at a price, so too (on special order, and at a very stiff price) is sound-on-film recording equipment. Sound-on-disc reproducing equipment, of the synchronous variety, is available, at a somewhat lower price; sound-on-disc recording equipment—of a kind—can be made, or adapted from existing apparatus; though somewhat intricate and expensive, it is possible. Non-synchronous sound-on-disc reproducing (and recording) equipment may be had for very little cost—and for this there is a virtually unlimited supply of records, both of music and sound-effects already available.

Therefore, the most practical thing at the moment would appear to be the use of non-synchronous disc-recorded accompaniments and sound-effects, graduating from this to experiments with synchronous disc recording and reproduction, and eventually, to the use of a complete sound-on-film installation when such become really practical for amateur use.

If you own one of the ordinary electric-reproducing phonographs (Victor, General Electric, Graybar, Majestic, Columbia, Philco, etc.), you will be able to use it, after a fashion, for this purpose. The average "automatic" phonograph, however, is of little use for this purpose—for aside from the fact that such machines are quite expensive, they play their records through from start to finish, whereas, for your purpose, you will often want to start, say, in the middle of a record, playing only a few bars before repeating, or changing to another record. The ordinary phonograph, of course, permits this; but it suffers from the same drawback as a single projector—the pauses between records. And these pauses since you are not likely to play a record through, but merely to use certain themes in it, may become quite annoying and frequent.

Therefore, by all means the best non-synchronous electrical reproducing outfit is one that contains two turntables, two pickups, and a "fader." You can easily assemble such an outfit from standard parts—there are a number of portable turntable-and-electric-pickup outfits, such as the "Co-columbia" and "Rotrola," available—and, using a good midget radio, with a dynamic speaker, for the amplifying and reproducing unit for both turntables, would give you an excellent non-synchronous sound system for well under $100. But this price may very well be bettered by a little judicious 'shopping'; you should be able to pick up one of the non-synchronous, double-turntable theatre outfits already mentioned very reasonably, either from one of the smaller theatres, which has used and discarded them in favor of synchronous equipment, or from a theatre-supply firm which has taken them as a trade-in. The turntable parts of such outfits are especially desirable for such use, as they not only have the twin turntables, often working at either 33 1/3 R P M. or 78 R P M., and a fader, but also the pickup arms are connected with pointers, working over graduated scales, which permit you to set your needle down accurately, at any predetermined point. Often, too, by eliminating the driving motors and substituting the proper gearing, these devices may be made into acceptable synchronous reproducers, driven by the projector through a flexible shaft. Nearly all of the newer projectors have motors built to handle such an extra load, and are fitted with shafts to which such a drive may be attached. This outfit might well be used, too, for synchronous recording. In such a case—unless from the start you had planned for recording, and used, say, the chassis and pickup of a home-recording phonograph—you would probably have to make some changes in the electrical circuit, and possibly in the pickups. In this connection

(Continued on Page 467)

An amateur-made equipment for synchronous recording on discs. The recording (and reproducing) turntable is driven by its own electric motor, and synchronized with the camera through a flexible shaft. The amplifier serves for both recording and reproduction.





The Family Newsreel

by

J. Dickinson Reed
Continuity Editor

HOME movies are doubly interesting if they tell a story. It doesn't have to be an epic either—just some simple idea which will give every member of the family something definite to do. And it really isn't hard to find such stories, every day in every home, a dozen little incidents occur which could be used as the basic story-idea for an entertaining home movie.

For instance, every photographer who has a small son or daughter has probably had the experience of finding the baby playing with the family camera—well, why not make that incident the basis of a story? Here is a continuity written around such an occurrence. It is simple, easily made, and will require about 150 feet 16mm. You will notice that it can be made entirely outdoors—but if you like to make interiors, much of the action can be moved indoors. In the same way you can adapt almost every point in the story to suit your individual requirements. Perhaps you won't want to show Father asleep on the back porch—well, a garden hammock will do just as well, and he'll probably be more comfortable! Perhaps you haven't a hedge handy for the big love-scene—well, why not the front porch, the family car, or almost any place where such action would naturally happen? Maybe you haven't a dog—or a cat; if you haven't, maybe your neighbors have, and if you can't beg or borrow them, you'll probably have some other pets ——even a canary or a parrot—who will do just as well. It is just the same with your players; maybe your family doesn't fit the specifications of the cast-sheet, well, your friends can help you out. Everybody likes to get into an interesting movie ——or, if necessary, you can even alter the cast to fit your own family. Adaptation must be the keynote of success in home-movie-making; don't follow any idea slavishly just because it's in the book ——keep the basic thought and adapt it to meet your own requirements.

And here is Idea Number One:

THE FAMILY NEWSREEL

Cast of Characters

Father	The family photographer
Sonny (3 or 4 years old)	The pride and problem of the family
Junior	Sonny's big brother
Betty	Junior's heavy date
Towser	The family dog
Maria	The cat

Mother, friends, etc., ad lib.

Scene 1. Long-shot of Father, asleep on the back porch. A newspaper is spread over his face, it rises and falls rhythmically.

Scene 2. Close-up of the newspaper heaving up and down as Father snores.

Scene 3. Long-shot (from a different angle), showing Sonny approaching Father.

Scene 4. Medium-shot of Sonny, interestedly watching the movement of the newspaper.

Scene 5. Medium shot of Sonny. He sees something, pan to camera lying on table near Father.

Scene 6. Close-up of Sonny, looking around furtively. The coast seems clear. He smiles gleefully.

Scene 7. Long-shot. Sonny picks up camera and runs out of the picture.

Scene 8. Close-up of Sonny examining camera. He peers into the lens, looks through finder, etc. Then he sees something outside the picture, and looks toward it.

Scene 9. Medium-shot of Towser looking toward camera, wagging his tail.

Scene 10. Close-up of Sonny, calling Towser.

Scene 11. Long-shot of Sonny, pointing camera at Towser.

Scene 12. Medium long-shot of Towser (Sonny in foreground if possible). Towser Towser insists on presenting his rear to camera.

Scene 13. Close-up of Sonny. He presses shutter-release of camera.

Scene 14. Close-up of Towser barking.

Scene 15. Close-up of Maria the cat.

Scene 16. Long-shot of Sonny calling the cat.

Scene 17. Close shot of Maria licking milk from saucer.

Scene 18. Medium-shot of Sonny. He takes a picture of the cat.

Scene 19. Medium long-shot of Junior and Betty seated by hedge. He tries to kiss her.

Continued on Page 466

How About the Eight?

By

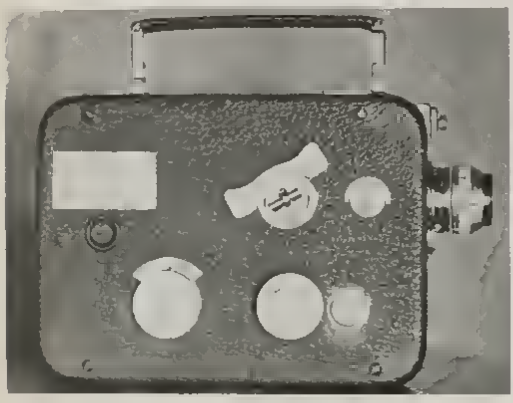
Wm. J. Grace

(Editor's Note—Wm. J. Grace has devised so many interesting things for the 16mm camera . . . and now his devices for the 8mm is stepping that economical little instrument up in the field, also because of the growing popularity of the 8mm camera we have asked Mr. Grace to furnish us with a series of articles on the 8mm camera. This is the first of his contributions.)

NOT quite two years ago a husky little infant was laid on the doorstep of our movie house. We haven't paid much attention to him because he's been a good little tad and has gone his quiet, unobtrusive way, growing steadily. That child, like his older brother, 16mm, is a great deal like his forebears, in that he retains the general family characteristic but exhibits the natural generation-to-generation evolution of striving for even greater success.

Sixteen has been popular for nine or ten years now. When it first came into the picture, it was left pretty much to its own devices for awhile. Then, as the possibilities of a film which could be safely handled attracted attention, and as its lower cost made the allure still greater, Sixteen enjoyed a rapid growth. Here was a field for the comparative layman to dabble in motion pictures. There was no danger of fire from an explosively inflammable film, and the cost was so much lower than that of "standard" film. The still camera enthusiasts welcomed the chance to blossom forth in still greater fields, and Sixteen caught a firm hold.

Not only did Sixteen grow in popularity for family and travel filming, but its low cost and safety attracted much commercial interest. To satisfy the demands for equipment which could satisfactorily project the picture on a screen of sufficient size to exhibit before small audiences of a hundred people, projector and lamp manufacturers developed hand in hand equipment far in excess of home projection demands. During the past two years Sixteen projectors have been increased in brilliancy over 300 per cent—from 200 watts to 750!



For those who are inclined to want effects in the 8mm pictures, Mr. Grace has made the lap-dissolve possible in this camera by equipping it with a rewind feature. At bottom left circle is the adjusting key for rewind. Next to it is the rewind key itself.

These things were what stood in the way of Sixteen—"Can the screen be illuminated brilliantly enough to make it practical," and "Won't the small size of the picture cause too much graininess even if it could be projected to large sizes!" Well, you Sixteeners who have been in the ranks for the past two or three years know the answer.



In lower left hand corner is the frame counter which Mr. Grace has installed on an 8mm camera.

Where does all this lead us? Right up to the question of the practicability of the newest member of the motion picture family—8mm. The growth of Eight will parallel the growth of Sixteen, is my prediction. Of course, it is inevitable that Eight will profit by the advancements already made in Sixteen, just as Sixteen profited by the developments in Thirty-five up to the time of Sixteen's birth. But the same objections will be raised and the same objections will be overruled regarding Eight as in the case of Sixteen.

The first reason for the existence of Eight is its low cost. In the first place, Eight film is so much smaller that four times as many pictures may be taken on the same amount of sensitized cellulose acetate (non-inflammable celluloid to you) as on Sixteen, and ten times as many as on Thirty-five. Where a four-minute screen time of Thirty-five costs about $15.00, Sixteen costs $6.50, and Eight only costs $2.25. Now just imagine that Eastman, the only manufacturer of 8mm film at present, advertises the fact that each 8mm scene only costs about ten cents, one-tenth of a dollar. This is just about the cost of each still picture of, say, 3¼ by 4¼ inch size, and what a difference between a still and a motion picture!

The second reason for the growing popularity of Eight is the fact that the lenses are so much smaller that they are much less expensive to manufacture than those for Thirty-five and Sixteen. It is easier to make small pieces of perfect optical glass than large ones. The cost of the mechanical parts of a camera or projector is not as great in proportion to the total as one might think. It's the little piece of highly refined and carefully ground sodium silicate stuck out in front that makes them cost so much.

The third thing about Eight which appeals to the photographer is the small size of the associated equipment possible with the tiny film size. In a little box which may be slipped in one's coat suit pocket it is possible to build a complete movie camera, loaded with film and equipped for making not only regular movies, but trick movies as well. Eight may have certain limitations at present, but they are to be found mainly in the projection end of the system. About the only possible objection to Eight just now as far as taking pictures is concerned is the absence of super-speed film and color film. You may depend on it, too, that film manufacturers will quickly accede to the demands of the movie-making public for these films when they consider the time economically ripe. The purchase of the

Continued on Page 468



Looking for 'Local-Color'

By

Milton R. Krasner, A.S.C.

LAST summer the Charles Rogers production unit at Paramount sent me up to the Oregon wheat country to make a picture called "Golden Harvest", this spring another company from the same unit will go to Honduras to photograph 'Green Gold' among the banana plantations. Nice trips, both of them—but despite Mr. Rogers' good will for cinematographers, neither trip is a mere pleasure-jaunt; there is a sound business reason behind them. Mr. Rogers realizes that you've got to have more than simply a good story, competent actors, a good director, and an expert cinematographer to turn out a really successful picture; you must have an atmosphere that is convincing—that is so completely natural that the audience forgets that it is looking at a make-believe story, and feels that it is really participating in something real.

Now, probably the biggest single item in building up such an atmosphere is "local color", the thousand and one details, little and great, that combine to give any locality its unmistakable individuality. On a wheat ranch, for instance—like the one used for so much of the action of "Golden Harvest"—there are literally thousands of little details which combine to give the impression of reality; conceivably, you could reproduce such a ranch near the studio, but even with the most painstaking planning you would miss enough of this 'local color' to destroy much of the desired impression of authenticity.

And what has all this to do with amateur cinematography? Just this: that if the amateur will look for, and use this sort of 'local color' in his films (especially the dramatic ones), he will find that he has learned how to make films that are different from the ordinary run of non-professional photoplays—films that make an audience sit up and take notice.

After all, just what do we want for an amateur photoplay?

First of all—aside from a reasonably smooth technique—a story which can be satisfactorily produced with the means at hand; parts which can be acted believably by the players available; action which is interesting—and natural, and a convincing, natural background against which to enact the story.

Of these considerations, the most important, to my mind, are the background available, and its relation to story and players. You can have the most unique background in the world—but if it conflicts with the story and players it is worthless. Worse yet, you may have a highly unusual background available—and not use it. We've all seen these things happen—even in our own films. But how can we prevent it?

Principally, I believe, by careful planning. When we first decide to make a photoplay, we should stop and think, survey the material we have to work with—especially the 'local color'. What can we make out of it? How can we use it to the full? Once we can answer these questions our picture is half made, though not an inch of film has been exposed. The perfect answer, of course, should be that we've made our background a really integral part of the story—a motivating force, almost an actor. If we can do that, we can be sure of a convincing, interesting film—one that will be sure to interest an audience.

Let's consider how this has been done in some professional pictures. For instance, there is my own 'Golden Harvest'. True, not all of the action took place on the Oregon wheat ranch, but the two leading players, Chester Morris and Richard Arlen, were cast as the two sons of a wheat grower, farming—wheat-farming—was bred in their blood, and even though Morris went to the city and became a grain-pit speculator, he was still a farmer under the skin, his kinship to the grain growers made him a fortune, and then impelled him to throw it away in an heroic effort to save his neighbors on the farm. The ranch atmosphere was truly a motivating part of the plot.

In 'State Fair,' the big fair was more than a background; it was truly a motivating factor—as fully an actor as were any of the flesh-and-blood players. The story of the fair was the story of the various characters, from start to finish, its influence was felt; it brought each one of them problems—happiness—triumph—and sorrow. It conspired against them, it thwarted them and, in spite of it all, they attained happiness.

In much the same way, the Steel Mills of Pittsburgh were used in a rather unimportant film released last year, "No Other Woman," while, back in the silent days, one of Lillian Gish's most powerful roles was in a film called "Wind," in which the Texas climate was used as the principal menace.

In the amateur field, I recall a film entered in the 1933 American Cinematographer Amateur Film Contest—one which was so good it received Honorable Mention. It was made by Elton Fox of Oakland, California, and was called

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"Pardon My Pups"

By

Dwight W. Warren, A.S.C.

A FEW weeks ago I photographed a two-reel comedy released by Educational Pictures, called 'Pardon My Pups.' It isn't a great picture—very few two reelers ever are—but I believe it is a picture that home-movie makers ought to see. Stripped of the routine embellishments of the professional comedy, it is a simple little home story of the type that home-movie makers are always looking for—but not always finding.

The picture begins with a double-exposed title, the background is a series of lap-dissolves carrying you from the front fence, up to the house, and finally to the gabled roof, all the time with a driving rain beating down. As the last title fades, the scene fades to a close shot of a ceiling, the rain is coming through, dripping down drop by drop into the room below. We follow a drop down, and see that it is falling down upon little "Mary Lou," asleep in bed. She wakes, gets up, and wakes Sonny," her big brother, reminding him that it's his birthday. He likes that—until he starts to wonder what he will be given for a birthday-present. he wants a motorcycle, but his father wants to give him a dog, a thoroughbred spaniel puppy. 'Sonny" is afraid of dogs; but the birthday-present idea is the only alibi father can think of to justify buying himself a pup.

After breakfast, the argument still rages. motorcycle vs. dog. One of 'Sonny's" friends—and a rival in love—drives up with a birthday-present a dog. "Sonny' is terrified, refuses the dog, and angers his father. Finally, 'Father' lays down an ultimatum that Sonny' is going to get a dog whether or not he likes the idea.

Here we fade to a traveling-shot of feet walking along a railroad-track. it is 'Sonny running away. He pauses by a sign which reads 'You are now leaving Farmington—population 10 899.' Slowly, he takes out a pencil, crosses off the last 9, and replaces it with an 8. He resumes his journey.

Soon a train whizzes past and as 'Sonny" steps back onto the track, he picks up a menu which has blown from the diner. That reminds him—he's getting hungry! Just then he smells something appetizing. we cut to a close up of some bacon sizzling in a pan. A tough-looking hobo is cooking his meal. Sonny approaches hungrily. But one look at the tough customer tells the boy he'll get no meal there, tightening up his belt he resumes his march.

Soon after, crossing a trestle, he stops—something is hurt underneath the bridge! He hurries down—and finds a dog. It is a very forlorn-looking spaniel—so forlorn that it finally overcomes his fear of dogs. He picks it uo and says. Well, I guess I'm licked. Back home for us, doggie!'

The next scene shows him—still carrying the spaniel—entering the back door of the girl-friend's home. She gladly helps him to bathe the dog, and make it presentable.

While they're doing this we cut back to the bridge which is near a road. A big shiny roadster draws up in it is the same boy who had offered Sonny the other dog. He stops calls out to the tramp, "Seen a dog around here? Mine jumped out of the car near here a little while ago. The tramp points under the bridge they run down, but no dog.

Here we cut back to 'Sonny' entering his home. 'Mother" and 'Father are arguing over his having run away. "Sonny' enters, much to Father's' gratification—he knew the boy would be back! But when they learn of the dog, the parents aren't so happy. "What—a mutt in my house?" storms Father.' 'Take it away—I won't have it!" 'Sonny's" suggestion that the dog seems about to have pups makes things still worse, finally, despite his pleading he is forced to take her to the pound, to be destroyed.

Shortly after, the boy friend comes to the house, to tell Father' that he won't get the pup he'd been planning on. "Queenie," its expectant mother, had run away and was lost. "Mary Lou" suggests that maybe the dog 'Sonny found is Queenie."

Meanwhile, 'Sonny' reaches the pound—but can't bear to have his dog destroyed—so he decides to hide her with his girl-friend.

'Father' and the boy-friend reach the pound, after a mad drive, no dog has been there. They drive home—and arriving there, they find "Sonny' and the missing dog just stealing into the girl-friend's house. The dog is 'Queenie,' after all, and her master decides to punish her for running away. But "Sonny" has different ideas—he considers her his dog now, and the two boys fight over it. Finally Sonny" gets his opponent down, and chokes him into admitting that "Queenie' is Sonny's' dog.

As 'Father" picks the two boys off the ground, scolding them for fighting. 'Mary Lou" calls excitedly from the house— Come quick—something's happened!" And we fade out on "Queenie," surrounded by her very new family.

This is, of course, only a very brief outline of the professional film, just enough I hope, to hint at the story's possibilities as a home-movie production. Like any outline, it doesn't have to be followed exactly just as a professional producer adapts a story to meet his own requirements, so too should the amateur producer adapt it to meet his par-



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A simple but effective two-light set-up. A single lamp, well to the left of the camera, gives front-light; another—high and masked by the piano—gives back-light. The low angle makes the shot especially effective.

Breaking Lighting Laws

By **Arthur Campbell**
Cinematographer

A CRAFTSMAN, someone has said, is a man who knows how to do the right thing at the right time; an artist is a craftsman who knows how to do the wrong thing at the right time. This is especially true of the photographic craftsmen. Photographic craftsmanship means doing the right thing at the right time—sedulously abiding by the basic rules of good photo-technique. Photographic artistry involves not only adherence to these basic rules of photo-technique, but knowing when and how to violate these canons in order to obtain some special effect.

In the two preceding articles we have tried to suggest the basic rules of good cinematographic lighting technique. We have tried to outline a series of lightings which, if followed, would assure uniformly good lighting of both people and sets in close-ups, medium-shots and long-shots. But there are times when a uniformly correct lighting will not meet the dramatic requirements of a scene; times when the dramatic meaning of the scene and action is widely at variance with the conventional. In such cases, the camera and lighting should attempt to match the mood of the action—even if in so doing they must strike boldly away from accepted rules.

The most important factor in this is the visual key of the scene. It can be closely matched to the dramatic key of the action: a high (or light) key for scenes of especial joy and freshness; a normal key for normal scenes; a low key for heavily dramatic action; and an excessively harsh, contrasted key for melodramatic action.

We have already discussed normal-key lighting. High-key lighting, as a rule, can be achieved by a normal balance of lighting, but a higher intensity, with—if you are using negative-positive—light printing. Low-key effects for scenes of sadness or severity, can be achieved by a normally-balanced lighting, with lower intensity (that is, with the lights either of lower power, or farther from the subject); or, with negative-positive, by normal exposure, underdevelopment and dark printing.

Then there are special effects which we can get only by altering our basic lighting set-up. For instance, we can get some very interesting effects by lighting the set itself in a low key, and picking out the principal character or characters by strongly lighting them with some sort of a concentrated light. Likewise, for highly dramatic or melodramatic action, you can get some fine effects by deliberately creating harsh shadows, offset by equally harsh high-lights. This can often be done with but one or two lights, strongly picking out the important objects, and casting strange shadows. In such shots the importance of backlighting cannot be overlooked, for it will help make your people stand out from the dark background, and give relief to your composition.

Source-lightings are very effective, and interesting to make. In making them, it is usually advisable to have a soft general lighting on the set and players (usually in a low key), and then pick out your principal player or object with a stronger light, ostensibly from some source shown or suggested in the picture—such as a lamp, a window, or even a match—but actually coming from some photographic source outside the picture-area, such as a spotlight or a regular light fitted with a concentrator, as suggested elsewhere in this issue. In some special instances, you can ignore all other lighting, and—thanks to SuperSensitive film and fast lenses—use a flashlight, or even—as in one sequence in "Strictly Personal," photographed by Milton Krasner, A.S.C.—a match, or the glow of a cigarette.

For many melodramatic scenes, very interesting effects can be obtained by placing the lights lower than usual—perhaps actually on the floor under the camera, for instance. Firelight effects can be secured by placing the lamp on the floor, and waving strips of flimsy material in front of it to simulate the flickering flames as reflected on the faces of the actors.

Night-interior sequences are very fascinating, especially if your action calls for the switching on or off of the lights. For example, imagine a shot of a room, totally unlighted, a door opens, silhouetting against a dimly-lighted corridor someone entering, showing merely that somebody comes in—but not who. Then the lights in the room are switched on, as the actor apparently presses the switch that controls the room lights. Similarly interesting effects can be made with an unlighted set, showing an intruder exploring with an ordinary, powerful hand-torch or flashlight.

On the other hand, shadow-effects against a brightly-lit background (lit from behind, as from lamps F and G in

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BACKYARD MOVIES

Movie Film Free

Here are the first winners of a 100 ft. roll of 16mm Panchromatic film given for those who send us simple continuities or plots that can be made by any Home Movie Maker. Elton Legg clicks with two this month. Harland Hutchings, of Kansas City, winner of Gold Medal in our 1933 Amateur Contest, also wins a roll. Many more were received, but these represent the best of the first to come to us. BACKYARD MOVIES will be a regular feature of the American Cinematographer. Try your hand

Sharp Work"

A very baffling trick picture can be made very easily with about six butcher-knives and two actors who we will call No 1 and No 2. The setting is any backyard, with a wooden background—such as a wall, a barn door or even a fence. For the best results this background should be dark.

Tie about ten feet of thin, strong dark cord to the handle of each butcher-knife. Then have Actor No 1 stand up against the wooden backgorund, and pin him in with the butcher-knives. Place the camera in an inverted position and in a location where you can get a close-up of No 1, showing all the knives. Start the camera, and after a few feet let someone outside the picture jerk the butcher-knives out by means of the black cords. Keep the camera running continuously and hold the shot for a little after all the knives are withdrawn.

Now begin on Actor No 2, with the camera right-side up. Get a close-up of him with a knife clinched in his teeth, looking as barbarous as possible. Then make some long-shots of him as he throws the knives toward the camera, have him hold one in his teeth, four in one hand, and one—the one he is to throw—in the other.

After the film has been processed, cut out the scenes made with the camera inverted, turn the film end for end, so that the picture is right-side up on the screen, and you will find the action reversed: the knives will be flying into place, pinning No 1 in. Assemble your film as follows: begin with No 2, in close-up, clinching a knife in his teeth; then cut to No 1, standing against the wooden background. Then the shot of No 2, throwing the first knife. Then the shot of No 1, showing the first knife striking the board—and so on until all the knives have been thrown and shown striking. You'll turn out a really different' picture very easily! Of course, varying the angles—giving a variety of close-ups and long-shots of these actions—will give more variety. And No 1 should look terrified at the right times!

—ELTON LEGG
Council Bluffs, Iowa

"The Smile Contest"

People like the idea of making movies at a party—but it isn't often that the guests can be persuaded to take their acting seriously. Here's an idea that capitalizes this!

Make a close-up or two of each guest. When the film is processed and projected, you will find that the group can nearly always be divided into groups according to the intensity of their smiles or frowns. Group them this way, and ahead of each group cut the following titles:

From the children to the Old Folks,
All will take a part
To find the broadest smiler
Let the contest start!

Notice in your judging
Expressions of the eyes—
These contestants are too forlorn
To capture any prize

(Close ups of the frowners follow here.)

These are slightly better,
They came through with a grin—
With a little practice
They couldn't help but win

(Close-ups of those with a slight smile.)

Here's some competition
Extremely hard to meet—
You judges must agree
Every one should beat

(Close-ups of the good smiles.)

Now to view the winner
With (his or her) smile from ear to ear,
He (or She) is the Champion Smiler—
And wins the keg of beer!

(Close-up of the one with the best smile.)

The End

—ELTON LEGG
Council Bluffs, Iowa

"Thirteen Spades"

Cast of Characters

Josephine Vernita Howard, Harley—The Bridge-hounds
Dorothy—The Date
Tommy—The Dater

Scene 1. Fade in Long-shot across living-room. The Bridge-hounds are grouped around the bridge-table. Josephine is shuffling the cards preparatory to dealing. Pan camera around to Dorothy as she settles herself in an armchair and starts to read a book.

Scene 2. Close-shot, preferably from a low angle. Dorothy stifles a yawn and idly turns a page; then settles herself comfortably for a dateless evening.

Scene 3. The bridge-table, shot from above. The cards are being dealt. Harley starts picking up his cards as they are dealt.

Scene 4. Bridge-table, shot over Harley's shoulder. Harley's hand picks up his cards; each one is a SPADE.

Scene 5. Exterior long-shot of front porch. (A photoflood inserted in the porch lamp will suffice if you use SuperPan film.) Tommy arrives, smoking a cigarette, and rings the doorbell. (A close-up of Tommy's hand pressing the button can be inserted here.)

Scene 6. Close-up of Dorothy. She hears the bell; is startled; looks up quickly into lens, moves her hand toward her mouth, and with an expression of bewilderment starts speaking.

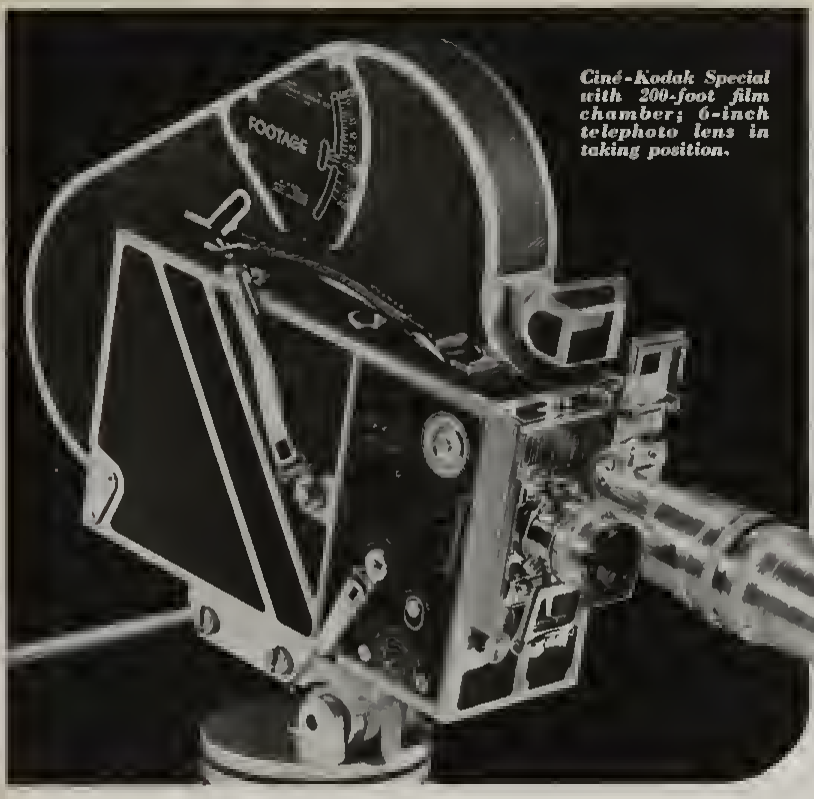
TITLE: OMIGOSH! I FORGOT ALL ABOUT TOMMY!"

Scene 7. Medium long-shot of Dorothy. She finishes speaking title, drops her book, and gets up hurriedly.

Scene 8. Medium long-shot of bridge-table. Include all players, but leave enough room for Dorothy to come in at one side. Harley has just picked up his last card (with a contented gesture) and put it into his hand as Dorothy comes into the picture. She pantomimes that she wants the room cleared before she goes to the door.

Scene 9. Exterior shot of Tommy at

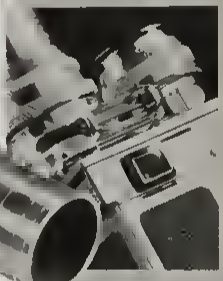
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Ciné-Kodak Special with 200-foot film chamber; 6-inch telephoto lens in taking position.



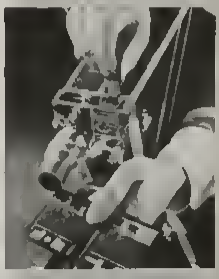
Interchangeable 100-foot and 200-foot film chambers enable you to switch from one film to another in a few seconds.



A reflex finder shows on a ground glass screen the exact field and focus of all of the six lenses supplied for the Special.



The Special's exclusive variable shutter makes fades and dissolves easy and certain—gives extra exposure control.



Circle and oval masks, also vertical and horizontal half masks, slip into a light-trapped slot between the lens and the film.

CINÉ-KODAK SPECIAL

CHALLENGES YOUR HIGHEST MOVIE MAKING AMBITIONS

FAR and away the most versatile of all 16 mm. movie cameras, the Special frees you from the inevitable restrictions of popularly priced home movie equipment.

Four of its unique refinements are illustrated at the right. Others include eight- and one-frame hand crank shafts, double lens turret for any of six interchangeable lenses, camera speeds from 8 to 64 frames a second, film meters on both film chambers and camera mechanism. With the Special, fades, dissolves, double and multiple exposures, slow motion and mask shots are simple and sure. The basic model, with Kodak Anastigmat *f*.1.9 lens, 100-foot film chamber, and set of six masks, is priced at $375. Alterations for special scientific or technical work will be estimated.

The complete and interesting story of the Special is told in the Ciné-Kodak Special Book—free upon request.

Eastman Kodak Company, Rochester, New York

If it isn't an Eastman, it isn't a Kodak

Walker's Filter-Factor Calculator



"Snoot" or concentrater designed by Arthur Campbell, cinematographer for the American Cinematographer, to go on a Solite Lamp. This can be used where concentrated light is needed for back-lighting, fire-place effect and for concentrating on some object

At the bottom of this page we have reproduced a filter-factor calculator designed by Elton Walker, a cinephotographer of Los Angeles. Walker has made some mighty fine scenic pictures and displays a splendid knowledge of filter values in his 16mm productions. In 1932 he was among those given certificates of merit for his beautiful scenic entries. We have reproduced below the Walker Calculator. We printed it in such a way that you can cut it out, mount it on a cardboard and have it as a permanent part of your photographic equipment.

At the left is a chart showing the filter factors for various filters. The first column is the factor for panchromatic film, the second column for supersensitive film. You can make your own chart to fit the filters you own. The center circle is divided into three sections, the outer section representing camera stops, the center section representing filter factors, and the inside section representing various camera speeds. (Remember this was designed for 16mm use.) On the right of the illustration are the two inner circles representing the filter factors and exposures per second. Cut that out and place it right above the other and you will see it takes the place of the two center circles.

Mount this entire illustration on cardboard, punch a hole in the exact center of both circles, mount the smaller over the larger in such a manner that the second portion can rotate freely on its center axle or pin.

Let's say you find the normal stop by your exposure meter is F11. Notice in the center illustration we have placed 0 opposite F11. Now let's say you are using a filter with a factor of 3. Look above 3 on the second circle and you will find F6.7. That is the proper stop with that filter.

Now let's say you were going to shoot the picture at 32 frames per second instead of the normal 16. Turn the 0 to F6.7 and you will find that your proper exposure would be F4.7.

Briefly the way to use this calculator is to turn the 0 on the second circle to a point underneath the F value that would be normal without a filter. Then determine your filter factor and look at the F value above that filter factor and you have the proper stop to use.

If for instance you are not using a filter but slow motion and you are going to shoot 32 frames per second and your normal is F11 as determined by meter or experience, if you will set the 0 at F11 and look above 32 on the bottom circle you will find that your proper stop is F8.

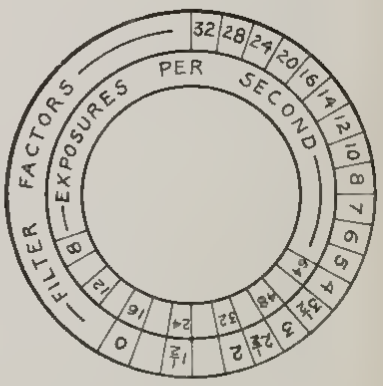
If you want to make your own value chart here are some of the factors for the standard filter when used with Panchromatic Film. K1-1.5, K2-3, K3-4, Aero 1-1.5, Aero 2-2.5, 23A-6, 25A 10, G-5. Here's the values for Supersensitive Film. (We do not give the values for the K filters for this film as they are practically never used by the professional with this type of film). Aero 1-1.25, Aero 2-1.5, G-3, 23A-3, 25A 4, 29F-8.

If you already own filters that are merely designated by X, say such as 2X, that merely means that filter has a factor of 2, if 4X the factor is 4.

In giving you the factors we have only touched upon the most popular types of filters. There are, of course, many more than these, but if you are delving into photography where you are using them you will already understand their filter factors.

FILTER	PAN	S PAN
K2	3	2
G	5	3
A23	6	3
F29	20	10
B56	12	8
X_1	5	4
5N5	8	5
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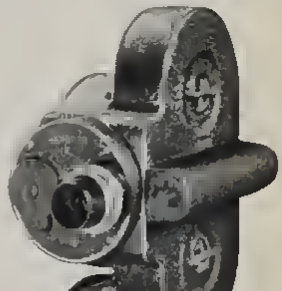
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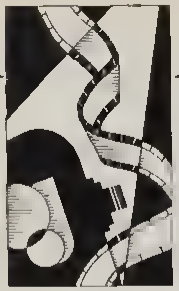
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PERSONAL MOVIE CAMERAS AND PROJECTORS



HERE'S HOW

by A. S. C. Members

FILTERS "Using SuperSensitive Panchromatic film, what filters would you use under the following conditions: 1. Taking pictures into the morning sun, when a bluish tint predominates? 2. Same, but when a reddish tint predominates? 3. Taking pictures into a setting sun, with the sky cloudy, and a reddish tint predominates? 4. Taking pictures into a sunset with broken clouds covering sun and sky, and when a bluish tint predominates? 5. Above the clouds, for a night-effect scene? 6. Above the clouds for a good day scene? Also, what books would you recommend on filters and their use?"—F. J. N., Brownsville, Tex.

It is a bit difficult to answer your first two questions properly, as you do not state whether you mean actually at sunrise, or later, when the sun is higher in the sky However, for No 1, I would advise either a 'G" or a 23-A filter, if you want to cut through the bluish haze For No 2, I doubt if a filter is necessary, since the reddish tint would act similarly to a red filter In both 3 and 4, the color of the clouds (i e , whether they are light or dark), and the effect you want to get, would influence your choice of filters Generally speaking, I would say that for No 3 no filter would be necessary, except possibly a light Neutral Density filter, to cut down the glare and contrast For No 4, I would again advise either a 'G' or a 23-A, to penetrate the bluish haze, and if you have light clouds, and want a dark sky for a backgorund, use an "F" filter

My own experience in aerial cinematography has been limited, but Elmer G Dyer, A S C, who worked with me on 'Night Flight,' advises either an "F" filter (with the exposure held very low) or a 72 (or 'Gamma") filter for aerial night-effects If you can use Infra-red-sensitive film, use that and an "F" filter Mr Dyer also advises that he finds the three most valuable filters for regular aerial work are the Aero 2, 'G", and E-22 The latter is Mr Dyer's favorite It is similar to the "G" but of a darker red-orange hue It is however, rather unstable, and therefore a 23-A would be a better substitute for most work

I can strongly recommend an article on "Filters and Filter-Factors," by Emery Huse, A S C, and Gordon Chambers, which appeared in the December, 1931, issue of this magazine, as one of the most practical treatises on Filtering for SuperSensitive film Mr Dyer's article on Aerial Cinematography, in Vol II of the Cinematographic Annual, should also be helpful to you

—Oliver T Marsh, A S C

MAKING A BEADED SCREEN. "How can I make a beaded screen for projection?"

Begin with a piece of canvas of the size you wish your screen to be, if you stretch it on a frame, like a painting, it will probably be more convenient to work with Then give it two coats of flat white paint Next, apply a heavy coat of Sherwin-Williams' White "Rubber Enamel" On this sprinkle small, white glass beads These can be procured from any theatrical costumer They must be put on while the paint is still "tacky"; it is best to put them on with a blower, but if you haven't one, a passable job can be made sprinkling them on by hand and shaking off the surplus Be careful not to leave any empty spots, however This "Rubber Enamel" never gets really hard, and the screen is flexible enough to be rolled up for storage or transportation If you want a really good job, put a black border around the edge, with rounded corners, to match the picture (You can use black "Rubber Enamel" for this, and treat it, too, with beads) This border sets the picture off better —Arthur C Miller, A S C

WIPE-OFFS. "How are the 'wipe-off' effects seen in professional films made?"—R.H.L., Brooklyn.

The 'wipe-off' effects used in professional pictures are made on the Optical Printer, described in an article in this issue by Lynn Dunn, A S C, Optical Printer expert at the RKO studio The amateur can make some simple wipe-offs directly in the camera, however, by fitting a tapering lens-hood on the lens, long enough so that a blade moved in front of it will be reasonably sharp You make your 'wipe" and rewind, thereafter synchronizing your wipe-in with the wipe-out

—Vernon Walker, A S C

NEUTRAL DENSITY FILTERS. "In a number of articles in The American Cinematographer, I have seen mention made of Neutral Density Filters. I have used them in Kodacolor work, but not in black-and-white. How should these filters be used?"—R G.G., Cambridge, Mass.

The neutral density filter is a filter which, instead of being colored, is a neutral-tinted gray Hence, instead of altering the color-rendition, it simply absorbs a certain percentage of the light these filters are made in several grades, according to their absorption, the most commonly used are the 25 percent, 50 percent, 75 percent and 100 percent absorption filters

Their uses are many For instance, if you are working on the beach or desert, or anywhere where you are faced with a large expanse of glaring sand, pavement, etc , you can reduce this glare with the N D filter Similarly, suppose you are working outdoors, where the lighting and subject combine to give a very contrasty result, you can soften the contrast by using a neutral density filter and opening your lens up, rather than stopping down to suit the light, which would naturally increase the contrast The N D filter has, it must be remembered, a tendency to grey over the picture Incidentally, if you are faced with the reverse of the situation just mentioned—that is, a very flat light, perhaps with a subject lacking in contrast, you can often improve your picture a great deal by stopping down your lens, or by using one of the "Contrast Group" filters—G, A and F. If your light is too poor to permit much stopping down, you can often do so by either slowing your camera-speed, or opening the shutter, if you have an adjustable one

—Jackson J Rose, A S C

RANGE-FINDERS. "Is there any 16mm camera equipped with a built-in range-finder, such as are used on the 'Leica' and 'Contax' miniature still-cameras?"
J.E.G., Seattle.

The new Bell & Howell semi-professional 'Filmo" is so equipped, and is, to the best of our knowledge, the only cine camera with this feature It does not, however, interlock with the lens, as in miniature camera practice, but gives a reading on its operating dial Almost any cine camera can advantageously be fitted with a supplementary range-finder.

—John W Boyle, A S C

AWARDS WON BY C. and R. COLES



The Silver Medal for Photography in the American Cinematographer Annual Contest.

Picture Titled "The World's Fair"



The Silver Cup in the Annual Contest, Metropolitan Motion Picture Club of New York.

Picture Titled "Cinecoles Review"

"DESERT SUNSET"
A still by C. & R. COLES

—pictures taken with a

WESTON EXPOSURE METER

The problem of *correct exposure* was not left to chance by Charles and Robert Coles in making these prize-winning pictures. The following excerpts from a report covering their trip suggests an easy solution to your own exposure problems:

"Last summer we took a trip to Arizona via Chicago. We had only one day to spend filming the World's Fair. The brilliancy and unusual color of the buildings made the judgment of exposures very difficult; particularly since we were using a variety of filters. In Arizona, with glaring sunlight and intense shadows side by side, the exposure problem was even more difficult. Desert sands, canyon shadows and sunlit cliffs, all in one scene, taxed the latitude of the film. To record both the dazzling highlights and inky shadows, the exposure had to be precise. So for both of these pictures all exposures were made using a Weston Exposure Meter. The conditions under which both pictures were taken were so unfamiliar to us, that exposures which we estimated were entirely different than the meter readings. But, we disregarded our own experience and relied solely on the meter. The Weston Meter has completely solved this exposure problem for us."

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HOME MOVIE CONTEST

The fine advance being made by amateurs in home motion picture making has prompted the AMERICAN SOCIETY OF CINEMATOGRAPHERS through its magazine the AMERICAN CNEMATOGRAPHER to offer $1 000 in cash prizes for their 1934 contest which will close on the 31st of October that is, all film must be in the offices of the AMERICAN CINEMATOGRAPHER on that date The rules and the entry blank will be printed in subsequent issues

This $1 000 will be divided very simply There will be a grand prize of $250.00 for the best all around picture There will be from 10 to 15 prizes in the various classifications of $50 00 each Even though you may not win the first prize you would have a chance at the $50.00 given for the best picture presented in the following classifications Scenic, Travel Educational, Scenario, Home Movies, Kodacolor, Technical and any other classifications which might be brought forth by the enteries made.

Be sure to look to the April issue for full and interesting details.

WATCH FOR FURTHER ANNOUNCEMENTS

There will be more prizes of equipment to be designated in March In that issue we will also print the rules, the entry blank and more information

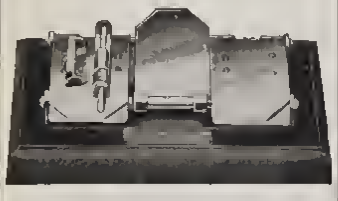
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BACKYARD MOVIES

(Continued from Page 456)

front door He is waiting, nervously He flips his cigarette away rings the bell again pantomimes his impatience

Scene 10 Same as Scene 8 Harley looks disgustedly up at Dorothy, and around at the other players

Scene 1 Close-up of Harley He speaks

TITLE "I'VE GOT TO PLAY THIS HAND—LET'S GO TO THE KITCHEN"

Scene 12 Medium long-shot of Bridge group Harley finishes speaking, and starts to get up

Scene 13 Quick flash of Tommy, still waiting

Scene 14 Long-shot of hallway The Bridge-hounds troop out of living-room and go toward kitchen One carries the table, another an ash-tray, and each carries his cards in his hand Dorothy comes last, still hurrying them out

Scene 15 Closer shot of Tommy at the door He is still waiting Dorothy's face appears in the glass window at the upper part of the door She recognizes Tommy, and opens the door He enters, closing the door behind him

Scene 16 Long-shot of hall—toward door If convenient, you can get a very good angle by shooting this from the stairs Tommy and Dorothy are talking together, while he removes overcoat and hat They exit to the living-room

Scene 17 Shot of the bridge-table, from directly above Harley's partner spreads out her hand

Scene 18 Medium close-shot of Harley's partner, from over Harley's shoulder She speaks, disgustedly

TITLE "I HOPE YOU RE SATISFIED! I HAVEN'T GOT A SINGLE SPADE!"

Scene 19 Close-up of Harley s partner, speaking

Scene 20 Close-up of Harley, made from low set-up, below table-top level He glares triumphantly at his partner and speaks

TITLE "I SHOULD WORRY ABOUT THAT!"

Scene 21, Medium-shot of Harley, showing table-top He spreads his hand out on the table, and says—

TITLE "I'VE GOT 13 SPADES!"

Scene 22 Close-up of Harley's cards spread out on table

Scene 23 Medium-shot of Dorothy and Tommy seated on the davenport in living-room They are enjoying themselves Suddenly they hear loud voices from the kitchen (You may add several Russian-style "flashes" of the mouths of the Bridge-hounds, talking excitedly) Dorothy and Tommy hear the noise, look toward the kitchen, and look at each other

Scene 24 Long-shot of living-room Dorothy and Tommy get up together and hurry out through doorway toward kitchen The camera may be panned with their movement, if necessary.

Scene 25 Long-shot of kitchen, looking toward living-room door. Harley is standing, gesticulating wildly and shouting. The other Bridge-hounds are disgustedly holding their hands to their ears They look helplessly toward the door as Dorothy and Tommy enter Harley continues to shout and wave his hands

FADE OUT

TITLE. "THE END"

Note Both the main title and the End title will be very effective if made as double-exposure titles, with a shot of the 13 Spades arranged on the table-top for a background

Contributed by
HARLAND B HUTCHINGS,
Kansas City, Mo

'Pardon My Pups'

(Continued from Page 454)

ticular case As a whole, however, I think that this story is unusually well suited to the needs of the home-movie maker The locale could be almost any home, in any town, the players could be any family or group, even the dog could be almost any dog Technically, the story is rather easily filmed there are only two bona-fide interiors—the bedroom, for the opening sequence, and the living-room, where most of the arguments about dogs take place, the girl-friend's home, where the dog is bathed, can be made either as an interior or an exterior, as may seem best A porch would serve admirably for this The rest of the picture can be made out of doors

The casting can be very flexible, as it stands, the story gives almost every member of the family a part to play, but this isn't by any means an iron-clad cast —you can add parts, or eliminate them, in order to adapt the story to your own needs

Essentially, however, the story offers the qualifications most needed for a good amateur picture: a simple, believable story, parts that can be played believably by any family or group, and technical requirements well adapted to the often limited means of the home-movie maker, best of all, the essential idea is such that the story can be reshaped in a number of different ways, as may be best suited to the desires and needs of the home producer

BREAKING LIGHTING LAWS

(Continued from Page 455)

last month's article) can be highly effective and are easily made The shadows thrown by inanimate objects on your set can have an important meaning, and play a vital part in your composition

But, with all the attention paid to set-lighting, don't by all means forget the importance of lighting people—especially in the closer shots You can make or break a face with your lighting Even with a very few lights at your disposal you can obtain beautiful effects The illustration, for instance, was made with only two lights one, for the front-light, a bit to the left of the camera, and about on a level with the girl's face, the other light high, for back-light, with both lamp and stand screened from the camera by the piano Notice how the back-light makes the girl's head and figure stand out from the dark background The low camera set-up also adds interest to the scene With this lighting, too, the player has a reasonable freedom of movement her face will be well lit at almost any angle—if she turns, there will be a nice interplay of light and shadow, while, if she turns her head far enough to her left, the back-light will outline it interestingly

For strongly dramatic close-ups, try using a strong top-light, from directly overhead or the reverse, a strong light from below, then switch your lighting to a normal arrangement—and you will understand why most of our great stars have their own favorite cinematographers, and will allow no one else to photograph them!

Your lighting can flatter a face—or distort it Fat faces can be made thinner through the use of hard shadows, rightly placed, long noses can be made to appear short by well-chosen camera-angles; crooked noses can even be straightened by judicious "line-lighting" Deeply-set eyes can be brought out by a strong front-light, while over-prominent eyes can often be made more attractive by reversing the procedure In fact, almost every defect can be remedied by the proper use of lighting, and its accessories—concentrators, diffusers, etc , the examples that could be quoted are endless

However, remember that you must learn to walk before you can run or dance—so master the basic technique of lighting before you essay any experiments with mood, key, or effects Only when you have really mastered the basic elements can you seek special effects by altering or violating these basic rules But, once you have mastered the fundamentals of lighting, you will find new joy in experimenting with advanced lightings Undoubtedly you will make many mistakes—we all do!—but a well lit, well photographed shot will more than repay you for other wasted efforts You will develop the true cinematographer's instinctive "feeling" for lighting—you will start to read light, translating it into terms of what will actually appear on the screen And then the true joy of cinematography will be yours

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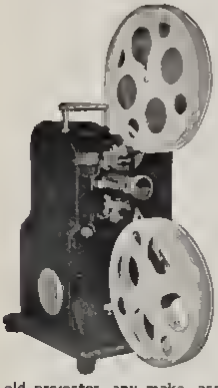
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The Family Newsreel

(Continued from Page 451)

Scene 20 Sonny peeps out from hedge, behind Junior and Betty

Scene 21 Close-up of Sonny, peeping through hedge He grins

Scene 22 Close-up of Junior kissing Betty

Scene 23 Medium long-shot of Sonny He takes a picture of Junior and Betty kissing, then slips away

Scene 24 Close shot of Sonny, winding the camera

Scene 25 Long-shot of back porch; Father is still sleeping Sonny tiptoes up

Scene 26. Close shot of Sonny, he takes a picture of Father, asleep

Scene 27. Close-up of Sonny, yawning

Scene 28 Long-shot. Sonny replaces the camera, yawns again, and curls up beside Father

Scene 29 Medium-shot of Father and Sonny, both asleep

TITLE- THREE DAYS LATER

Scene 30 Long-shot of family group in the garden (As many people as you want can be used in this scene.) Father enters, laughing, and holding up some snapshots

Scene 31 Closer shot, the family cluster around Father

Scene 32 Series of inserts—the snapshots They show the rear view of Towser, the hind legs and tail of the cat, Junior and Betty kissing, and Father asleep under the newspaper. In making the still pictures for these inserts, get the funniest angles you can think of, bearing in mind, however, that they are supposed to have been taken by little Sonny.

Scene 33 Long shot of the group Everybody is laughing at Junior

Scene 34 Close-up of Junior—terrifically embarrassed.

Scene 3 Medium long-shot of group Everyone is teasing Junior, he finally makes a break and runs away wildly

Scene 36 Long-shot of group, as the snapshots are passed around

Scene 37 Close-up of Sonny, smiling. He winks at the camera

FADE OUT

(The End)

Although this continuity is based on the idea of Sonny's making snapshots, it can very successfully be adapted to have him make movies with Father's movie-camera, if you want to In that case, of course, the last sequence will take place indoors, instead of in the garden You can show Father coming home, with the film in his hand, then the family trooping into the projection-room, waiting expectantly You can show Father threading the projector, then he turns the lights off, and switches the projector on, with the beam pointed into the camera Now give the camera a

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very swift pan to the right—so fast that everything is blurred, and begin the first of the scenes which Sonny is supposed to have made the same way The effect will be as though the camera had been very quickly panned over from the projector to the screen You can get some very good laughs by intercutting from Sonny's scenes to short close-ups of the members of the audience—including Junior, Towser, and Maria—to show their reaction to the scenes of themselves which Sonny has "stolen "

At the end, cut quickly to a close-up of the screen, as the lights go on in the room After that, you can reverse your angle, and show the group around the projector ,and carry on the action of script scenes 33-37 Made this way, the story will require not less than 200 feet 16mm, and possibly more; but of course it can be made rather funnier that way However, either way, it will make a very entertaining home movie production, which anyone can make—and make well

Sound For Home Movies

(Continued from Page 450)

it may be mentioned that quite a number of synchronous turntables, with gearing for use with either 33 1/3 or 78 R P M , made for atachment to 16mm projectors, are available at very low prices

With such equipment, connected to a shaft on the camera (this can be done with the Victor, Filmo, and some other types) and a proper electrical circuit, one can do quite well synchronizing one's own pictures, recording as the picture is made, using the pre-grooved composition records available for home-recording phonographs Similarly, you can "dub" sound and dialog into your pictures, by using this sort of a recording turntable with a projector, and having the actors speak their lines into the microphone, synchronizing with the lip-movements and action of the picture In fact, one can sometimes even eliminate the record last year the Movie Club of the University of Southern California gave several shows very successfully this way—using the Bell & Howell auditorium, projecting the picture on a large screen, they had their actors—well rehearsed—speak their lines into a microphone in the 35mm projection-booth, and reproduced the sound through the regular talkie loudspeakers behind the screen Those who heard the performances state that, due to very painstaking rehearsal, the students were quite successful

John Boyle, A.S.C., Bereaved

• Corrinne F Boyle, sister of John W Boyle, past president of the American Society of Cinematographers, died early in February, shortly after Mr Boyle's return from New York

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HOW ABOUT THE EIGHT?

(Continued from Page 452)

present equipment now offered won't be handicapped by radical changes later on The camera makers couldn't afford to cause quick obsolescence of thousands of present cameras

And while we're on this subject of obsolescence, a word to adherents of Sixteen will not be amiss Don't give up your Sixteen just to follow Eight Parallel Eight with your present Sixteen, if you want, for there will always be plenty of room in the field for Sixteen, just as Thirty-five still has a solidly carved niche in movie making Eight is the new thing Eight is the future of amateur cinephotography But don't forget that Sixteen will always be in a class by itself, unfailingly serving many purposes which Eight may take some time to encompass

Every day I am called upon to design special gadgets for amateurs to facilitate easier trick work Most of this has been in connection with Sixteen equipment, but lately I have had the opportunity to make similar installations on Eight equipment Accompanying this article is a photographic description of one such installation I should like to state right now before another word follows that I consider Eight just as fine mechanically and optically as Sixteen equipment or even Thirty-five I unhesitatingly recommend Eight, either to the hitherto non-movie maker or to the veteran of Sixteen. This strong belief in the possibilities of the new Eight have, I am proud to say, resulted directly in several cases of correspondents purchasing Eight equipment

This article is the forerunner, it is Eight work To the newcomer with his little thirty-dollar Eight camera let us extend a welcome hand from amateur movie-land We hope you will make the most of your equipment and get into the game with both feet You won't be long in finding that a veritable wealth of inexpensive entertainment is at your command You are a little brother in motion picture work, but you are just as valuable to the vast throng of movie workers as the most brilliant cameraman in Hollywood, and we fervently pray that you stick with us! To the Sixteener who has been wondering about the tiny Eight, rest assured that big things are going to happen with Eight It isn't a toy, a plaything for the kids If you have the money, invest in Eight now You'll be able to stretch your filming just about three times as far with Eight as you can with Sixteen, and that means three times as much advancement, development, and pleasure as you can now afford

Looking For 'Local Color'

(Continuad from Paga 453)

"Water Ways" Those who have been in the San Francisco-Oakland district will surely remember the impression made by the harbor and shipping well, Mr Fox utilized this as a basic part of his story Moreover, he utilized a little-known aspect of it—the port of "Ghost Ships"—a section of the harbor in which scores of old, condemned sailing-ships and some old shipping-board steamers, too, are tied up, decommissioned, and slowly rotting, cared for by a few old sailors turned watchmen Mr Fox used this background, and, for actors, he chose one of these old sailor-watchmen and his dog His film was a simple little picture, but more than ordinarily interesting because of the way he wove his background into the story, and the fact that everything combined to make the film natural—believable

Cinematographer Gerrard Extols Filters

• With 'Little Women," photographed by Henry W Gerrard, A S C , among the films favored to garner the year s highest awards for photography, Gerrard feels that an interesting and important part of his equipment in the making of this production was his diffusion filters

'I used Scheibe Diffusion filters, especially the half and quarter gradations almost through the entire production,' states Cinematographer Gerrard "All of the exterior sequences and the night interiors, as well as many of the other scenes, were made with these filtrs"



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Application of Leica Lenses

(Continued from Page 438)

long focal lense has a narrower and a more selective angle of view and gives a larger image of the autogiro

Of the eleven Leica lenses, six have different focal lengths, viz 35mm, short focal length, wide angle, 65 degrees; 50mm, standard focal length, normal angle, 48 degrees, 73mm, medium-long local length, narrow angle, 34 degrees, 90mm, long focal length, narrow angle, 27 degrees, 105mm, long focal length, narrow angle, 24 degrees, 135mm, long focal length, narrow angle, 19 degrees How the focal length of the lens affects the angle of view is graphically shown in illustration No 2 Reading from left to right, the pictures were photographed with the 35mm, 50mm, 90mm and the 135mm Leica lenses

Where large sized pictures of details or distant objects are required, it is advisable to use long focal length lenses There are limits to the subsequent enlargement of the negative, inasmuch as minute details tend to loose their sharpness even though fine grain film is used The magnification of the long focal length lenses over the standard 50mm lens is, 90mm lens 1 8x, 105mm lens 2 1x and 135mm lens 2 7x Illustration No 3 is a practical example of the above Here we have one picture made with a wide angle (135mm) lens For comparison a section of the wide angle picture has been enlarged to correspond to the 135mm picture

By changing the focal length of the lens, the size of the background objects may be controlled In illustration No 4, one picture was made with a wide angle lens and the other with a long focal length lens In both cases, the camera position was **unchanged.** The foreground figure was moved so as to be the same size for both pictures Both pictures were made at f4 5, with the focus set for the building in the background This illustrates the greater depth of focus of the short focal length lens However, even the long focal length (135mm) Leica lens has a depth of focus equal to that of the lens commonly fitted to 3¼x 4¼ camera

As the miniature camera does not possess a 'ring and falling' front, it is sometimes necessary to slightly tilt the camera in order to photograph the entire object Compensation for the resulting distortion in the negative, can easily be made when the negative is enlarged Merely tilt the paper easel one way or the other, until the distortion is liminated Then focus the image sharply at the center, stop the

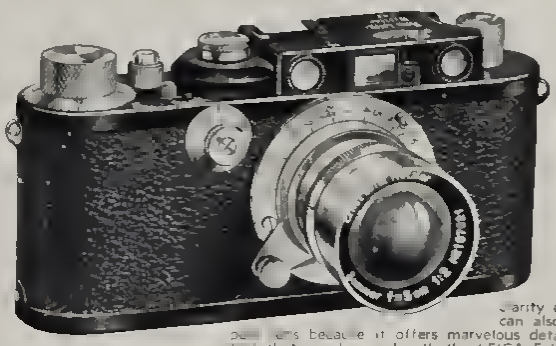
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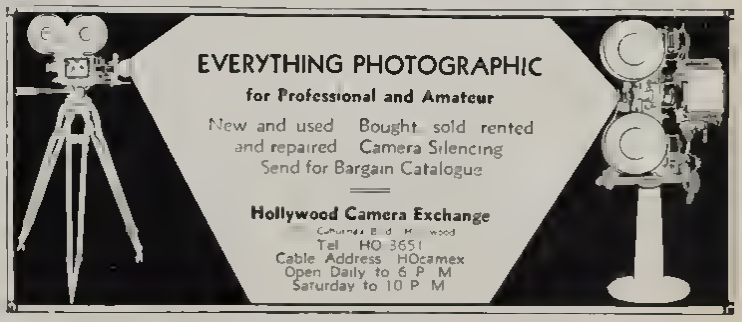
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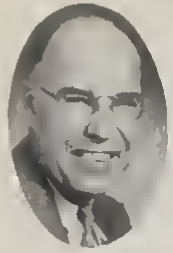
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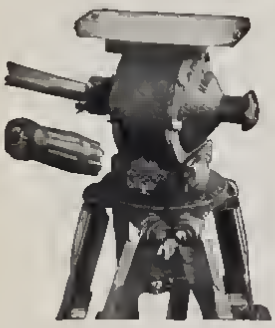


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lens down considerably, and make the enlargement. In illustration No. 5, prints before and after the distortion was eliminated, are shown.

If the lens principles as set forth in this article are observed, the miniature camera enthusiast will experience little difficulty in enjoying the wide range of the Leica camera.

Optical Printers and Technique

(Continued from Page 446)

mount on this device, and wipes of any length can be made. Many attachments are available for making all of the varied trick wipes called for. The ground glass window at the top of the lamp-house is a handy feature for easy and accurate checking of film density. The lamp employed is of the 1,000 Watt, tubular projection type. The tachometer, "P", is for accurate checking of motor speed. At the rear end of the printer can be noticed a metal frame, "Q". The lamp-house can be readily removed, and on this frame mounted a larger printing field. This field can be illuminated by a spot from behind, or by the reflected light of two spots from the sides, in front. Any retouching, matting or filtering can be easily done, working to a large scale on this printing field. Matted shots can be made in practically no more time than it takes to paint the matte. Shadows and highlights in stationary shots can be intensified or reduced with the same ease that a retoucher works on a still picture. Stationary or moving clouds can be doubled in scenes with great ease.

Fig. 4 illustrates how the printer movement is mounted. The front of this movement is flush with the front of the printer-head, permitting the use of hard mattes in front of the film. The water cell, "R", helps to reduce the heat from the lamp on the film. Behind the water cell are mounted the light-diffusing screens. The flanges shown can be easily interchanged for reels. Hand cranks are on either side of the printer-head for convenience in threading. The movement is a standard Bell & Howell pilot-pin movement, with the rear pressure-plate cut away. A special feature to be found in RKO dupes is the reproduction of the original key numbers, both movements having been altered for this feature. The advantage of these key numbers to the film editor in cutting in the dupes can readily be seen, these key numbers and the aforementioned markers quickly settle any question as to whether or not the dissolve was made at the point ordered. The camera lens-mount, "T", is of a very original design. By turning the wheel on the top, the lens will slide in and out smoothly, coming back exactly to the original line-up. This is an advantage for quick reducing or enlarging, and for certain zoom shots. At the back of the lens-mount is mounted the intercepting prism mentioned earlier. Below

the mount is the bracket holding the matte-device rods This bracket has a two-way adjustment, enabling the mattes to be slid in and out during photographing The insignia below the bracket probably calls for explanation, its significance can readily be understood, however, when it is mentioned that it is on a box containing the writer's pet gauzes, mattes, filters, etc Although this printer probably looks a bit complicated, the greatest thing about it is its ease of operation, due to the accessibility of all controls A great quantity of work can be run through it in a surprisingly short time

In the next issue we will explain the use of the optical printer, especially as regards the trick wipe-overs so popular now Several illustrations will show the actual effects made on this optical printer, and used in recent RKO productions

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Together Again

• George Schneiderman, A S C, is again working with Director John Ford, upon whose productions Mr Schneiderman has for many years been the invariable Supervising Cinematographer The picture that reunites them is ' The World Moves On," Director Ford's first for Fox in over a year The Schneiderman-Ford combination dates back to The Iron Horse," 'Four Sons" and other epics of the silent films.

Boyle's "Sweden" May Go To Russia

• John W Boyle, A S C, whose film Sweden—Land of the Vikings" is one of the hits of the New York season, has been invited by the Soviet Government to make a similar film in Russia Cinematographer Boyle has also received similar invitations from South American interests

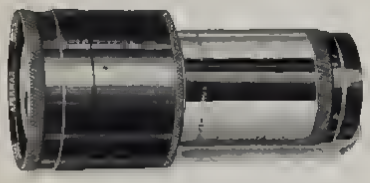
Good Shoots "Peck's Bad Boy"

• Frank B Good, A S C, for seven years Chief Cinematographer for Jackie Coogan Productions, will photograph the talkie remake of one of the Coogan hits, "Peck's Bad Boy," starring Jackie Cooper

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Cooke Projection Lenses

● The 46-foot wide magnascope ' image you see on the screen at Radio City Music Hall — brilliantly illuminated clear to the edges — comes from a Cooke 3¼ inch F 1 9 Projection Lens through a standard projection aperture 190 feet away. The years of laboratory work and manufacturing experience behind that performance constitute a favorite legend in British projection rooms, where for years Cooke lenses have been used almost exclusively These lenses are available in a wide variety of sizes and styles Write for complete description

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THE "LANGUAGE" OF DESIGN

(Continued from Page 440)

to the main door of a cathedral Remember that strength lies in simplicity

HARMONY —Harmony is consistency of the whole composition, an agreeable and satisfying arrangement of all the elements of design All oppositions too rude or startling should be avoided, for the accord must always be more apparent than the difference Cultivate an appreciation for what is good in proportion, beautiful in line, satisfactory in tone relationships, and the result will be Harmony

The various elements of design furnish us with as many tools with which to express our thoughts We may accentuate or suppress any one of these elements to bring out the mood we wish to emphasize in our picture It remains for us only to select the correct ones

VOCABULARY OF THE LANCUACE OF DESICN

Tone

Horizontal Stability, sometimes death and finality

Long horizontals Calmness, serenity, peace, quiet, tranquility

Verticals Strength, courage dignity, sternness

Long verticals Majesty grandeur, sublimity

Curves Beauty, grace, interest, variety

Long, easy curves Languor

Short, sharp curves Action, tension speed, jazz

The "S" curve Grace, elegance

The "O" circle Completeness, but too perfect, mechanical

Oblique lines Action, motion, speed power, energy, joy

Zig-zag line Violence, threat, weirdness, treachery, horror

Right Angles Harsh cold, mechanical

Acute Angles Energy, action

Obtuse Angles Rest ease, monotony

Triangles Firmness, physical stability

Squares Stolid, mechanical

Star, halo, radiation Spirituality

Numerous dashes Wind, speed

Tone

Normal Key Naturalistic

High Key Happiness, gaiety, joy, delicacy, youth

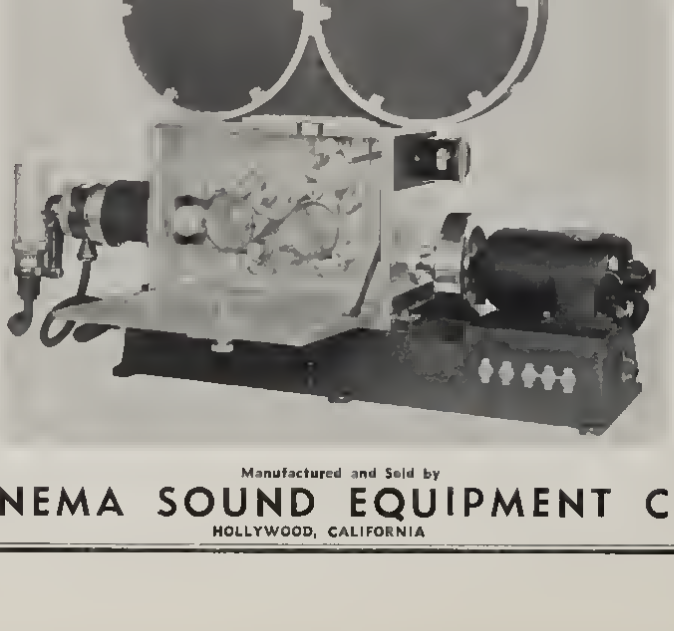
Medium Key (Use of greys only, elimination of highlights and deep shadows) Vagueness, fogginess, mystery

Low Key Severity, restraint, somberness, grief, sordidness

Extreme Key (Use of only the extremes of highlights and shadows with

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Formal Balance Formality, stateliness, conventionality, symmetry, precision

Informal Balance Unconventionality, variety, eccentric, fantastic

Proportion (large masses) Simplicity, directness, boldness

Proportion (small masses and lines) Uncertainty, confusion

Opposition Strength, variety, interest

Transition Softening and blending of the above

Emphasis Accentuation of one particular feature

Subordination Elimination of interest from less important features.

IMPROVISING FOR NEWSREELS

(Continued from Page 442)

the picture Nothing daunts the newsreeler, so off came the belt to serve a better purpose And this it did well, but for every second Joe ground, his pants slipped an inch, but he got his picture, pants or no pants

Eighteen years ago Joe covered the first electric engine to go into service on the Chicago, Milwaukee and St Paul Railroad He and Joe Rucker had arranged for the engine to be driven way up into the mountains where particularly beautiful scenery could be photographed as a setting for the locomotive Not until they reached this place did Joe realize that he had lost a film takeup magazine, the only one he had along To go back would take too long and it became another case of improvising or losing a picture Calculating carefully, Joe ground off exactly the twenty-five feet he needed INTO the chamber of his camera without any takeup magazine His calculations were correct, for the camera did not buckle and he unloaded the film direct from camera to can in his change bag

To look at Al Brick of Fox Movietonews you might think he was a polo player or at least a golfer of the better type But Al is a real honest to goodness "knight of the groan box," as Red Selbinger calls us, and wears those fancy getups while shooting whatever happens

Can you imagine lugging one of those heavy movietone outfits for eighteen miles on your back? Well, Al and his sound man did It was on a story up at Bridal Veil Falls of the Colorado River Hard as this job was, imagine Al's feelings when he started to shoot his picture and found his camera switch missing This sounds easy, but remember, reader, those switches control lots of gadgets, and no switch, no picture To top the trouble no tools were to be found Who felt like packing heavy tools on top of heavy cameras? Just as you expect, Al solved the problem Pounding his pen knife to the shape of a screw driver with a rock, he set to work, removing rheostat, tachometer and balance wheel and covers in order to reach the location of the various ends of wire With these in reach more wire was needed to improvise a switch that could be reached Here Al's wearing apparel came in handy That tricky set of spring suspenders could serve a double duty He cut a couple of pieces and made a mighty fine job of splicing With his camera put together again, he merely gripped two ends of the wire together to make the contact that made the picture I'll bet his expense account carried a strange item that week "One pair suspenders, used to repair camera switch $1 50"

Draper Flies to College

• Plenty of A S C members have been to college—but Lauren Draper, A S C, flew to Dartmouth College He was sent by Metro-Goldwyn-Mayer to photograph the Dartmouth Winter Sports Carnival for a Pete Smith short Draper is acting as Cinematographer and Director of this film, with Walter Strange, A S C, Associate Cinematographer

Walker Radios Hunt

• When Vernon Walker, A S C, was in New York recently, photographing process backgrounds for forthcoming RKO-Radio Pictures, he was enabled to keep in daily contact with the studio by means of Cinematographer J Roy Hunt, A S C, who has a powerful short-wave radiophone station in Hollywood

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Improved Camera Crane

(Continued from Page 441)

may be mounted above the camera, attached directly to the blimp

The subhead upon which tilt-head, camera, and seats are mounted may be panned through an arc of over 180 degrees, and is controlled by airplane-type foot-pedals, operated by the Operative Cinematographer It is fitted with ball-bearings An important feature of this device is the fact that this action is decentered, so that the camera pans around the (vertical) Optical Axis of the lens, making it possible to use the crane on many process and miniature shots which would otherwise preclude panning, and also giving a better general perspective to panned shots

As has been mentioned, sockets are provided to carry several lamps, ordinarily, one on each side of the camera and a third directly above it; but more may be used, if necessary A further innovation, likely to be of considerable use, is the provision for a standard microphone-boom, which is mounted on the crane-arm itself, just behind the camera-carriage At present, a conventional, steel microphone-boom is used, but eventually this will be replaced by a special one built of Duralumin. A seat or platform will be provided for the microphone-operafor.

The new crane will rotate through a full 360 degree horizontal arc, and may be raised to a height of nearly 30 feet above the ground. The frame is cut away on one side, to permit this maximum elevation; the boom raises to an angle of approximately 70 degrees, and may be dropped to ground level, or lower

Elected to A.S.C.

• Mr Walter Strenge, one of the leading cinematographers in New York, was recently elected a member of the American Society of Cinematographers.

Announcement!

The Brulatour Bulletin, published for more than two years in the leading Cinematographers' publications, was discontinued a few months ago because we felt that the field had been completely covered.

Meantime, scores of cameramen have asked us to resume publication of The Brulatour Bulletin.

Heads of camera departments at practically every major studio have made the same request.

Very recently we have received similar requests from studio production executives who found The Bulletin most helpful in identifying the cinematographers associated with important productions throughout the industry, during actual production period

At its inception, The Brulatour Bulletin was frankly a publicity feature, designed to extend the service and good-will of Eastman Kodak Company and J. E. Brulatour, Inc , Distributors of Eastman Films.

It proved to be more than that

It developed into a barometer of photographic activity—closely observed by cameramen, their immediate department heads and top executives alike This because it was always dependable, reliable, informative and briefly to the point

Therefore, Eastman Kodak Company and J. E Brulatour, Inc., will extend this vital service and henceforth will publish The Brulatour Bulletin each Monday as a feature of The Hollywood Reporter.

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CHAS. B. LANG
A S C

See Page 488



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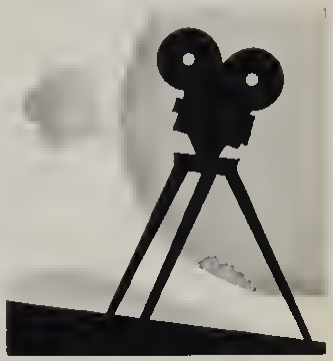
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• Infra Red in the air will be handled by Elmer Dyer, A S C , the foremost air cinematographer in the motion picture industry

• A new Camera Crane and other technical subjects will be treated by members of the American Society of Cinematographers

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• A N N U A L I N D E X •

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[illegible] spots and sky [illegible] power [illegible] About 1/14 [illegible]



[illegible] the rugged new [illegible] Used in 24" [illegible] About [illegible]



[illegible] watt G-48. Used in 18" sun spot and studio condenser spot [illegible] Also [illegible] 1,000 watt [illegible]



[illegible] and [illegible] watt [illegible] Used in rifle lamps, side lamps and strip units. Also in flood [illegible]



[illegible] watt [illegible] Brings out [illegible] Primarily for [illegible] Used in regular [illegible] watt units [illegible] life) About 1/10 size



1000 watt [illegible] Used in "Lupe" lamps, at [illegible] lamps and occasionally in practical lighting fixtures. About 1/10 size



500 watt [illegible] Used in table spots and in practical lighting fixtures. Also in amateur lighting units. About 1/6 size



New [illegible] English Lamps. [illegible] per effects. No 75 [illegible] more than 4 times the [illegible] the older No. 50. About [illegible] size



[illegible] watt units [illegible] About 1/4 size



[illegible] About 1/4 size



[illegible] T-12. Used in practical lighting fixtures, such as table lamps and floor lamps. About 1/5 size



Left [illegible] About [illegible] lamps [illegible] lamps [illegible]

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Hunt, Roy
Hyer William C
Jackman Floyd, Dr
Jackson, Harry
Jansen, William H
June Ray
Kline Ben
Knechtel Lloyd
Kohler Henry N
Krasner Milton
Kull, Adolph E
Landers Sam
Lang Charles B, Jr
Lloyd Art
Lockwood J R
Lundin Walter
Lancaster George J
Lyons Chet
Mackenzie Jack
Marsh, Oliver
Marshall Chas A
Marshall William C
Marley J Peverell
Martinelli, Arthur
McWilliams Glen
McGill Barney
Meehan, Geo B Jr
Miller Arthur
Miller Ernest W
Miller Virgil E
Milner Victor
Mohr, Hal
Moore Milton M
Musuraca Nick
Morgan, Ira H
Neuman Harry C
Nobles William
O Connell L William
Palmer, Ernest
Paul Edward F
Peach Kenneth
Perry Harry
Perry Paul P
Polito Sol
Powers Len
Reed Arthur
Rees William A
Reynolds, Ben F
Robinson George
Roos Len H
Rose Jackson J
Rosher Charles
Rosson Harold
Ruttenberg Joseph
Schneiderman George
Schoenbaum, Charles
Scott Homer
Seitz John F
Shamroy Leon
Sharp Henry
Siegler, Allen
Silver, John
Sintzenich Harold
Smith, Jack
Smith, Leonard
Snyder, Edward J
Sparkuhl Theodor
Stengler Mack
Stout Archie J
Stumar, Charles
Stumar, John
Strenge, Walter
Struss Karl
Tetzlaff Ted
Thompson William C
Todd, Arthur
Toland Gregg
Tover, Leo
Towers, Richard
Tutwiler, Tom
Valentine Joseph A
Van Buren, Ned
Van Trees James
Varges Arlel
Wagner Sidney C
Walker Joseph
Warren Dwight
Warrenton Gilbert
Wenstrom Harold
Wetzel, Al
White Lester
Wilky Guy L
Wyckoff Alvin
Zucker Frank C

Special Process

Binger Ray
Cully Russell A
Dunning Dodge
Eagler Paul
Edouart Farciot
Fabian Maxmillian
Haskin Byron
Jackman Fred
Jackman Fred Jr
Koenekamp H F
Lipstein Harold
Pollock Gordon
Ries Irving G
Shearer Douglas
Walker, Vernon L
Williams William N
Wrigley Dewey
Wimpy Rex
Zech, Harry

Second Cinematographers

Anderson, Don
Anderson Wesley
Arling, Arthur E
Badaracco Jacob
Bader Walter
Bell Jack C
Bennett, Guy M
Bennett Monroe
Bentley, Fred
Biroc Joe
Blackstone, Cliff
Bradley Wilbur H
Chewning Wallace
Clark Roy
Clemens Geo T
Cline, Wilfrid E
Cohen Edward J
Collings Russell D
Cooper, Harry H
Cortez, Stanley
Davis Harry
Davis Leland E
Dean, Faxon
DeGrasse Robert
Diamond Jas R
Dunn Linwood G
Eslick LeRoy
Fapp Daniel L
Feindel Jckey
Fetters, C Curtis
Fitzgerald Edward
Freulich, Henry
Galezio Len
Galligan, Thomas
Garnett Paul
Gibbons, Jeff T
Gordon, James
Gray King D
Green Kenneth
Greenhalgh Jack
Guffey Burnett
Guthrie Carl
Hallenberger, Harry
Harper James B
Henderson Edward
Hoag Robert
Huggins L Owens
Jennings Lewis E
Kaifer, Fred E
Kershner Glenn
Komman Anthony
Lane Al L
Lanning, Reggie
LaShelle Joseph
Laszlo, Ernest
Lawton Charles C, Jr
Lindon Lionel A
Lyons Edgar H
Mayer, Fred
Mazorah, Harold J
Meade Kyme
Mellor, William C
Merland Herry
Metty R L
Meis Pierre M
Newhard Guy J
Newhard, Robert S
Nogle George
Novak, Joe
Palmer, Robert
Pierce, Otto
Pittack Robert
Pyle Edward
Ramsey Ray L
Rand William
Redman Frank
Ries Ray
Roberts Josiah
Salerno Charles Jr
Schoedsack G F
Schuerich Victor
Shipham, Bert
Smith William Cooper
Snyder, Wm
Stafford Earl
Taopenbeck Hatto
Thackery Ellis F
Thompson Stuart
Titus Frank
Travis N C
Unholz, George
Vaughan Roy V
Van Dyke Herbert
Van Enger Willard
Vogel Paul Charles
Vogel Willard L
White Ben
Wild Harry
Williams Al E
Williamson James

Assistant Cinematographers

Abbott L B
Adams Eddie
Ahern Lloyd
Anderson Eddie
Baldwin, Harold
Bergholz Emmett
Bohny, Charles
Bourne, George
Bradford William
Brandenburg Gentry
Bridenbecker, Milton
Brigham, Donald H
Bronner Robert
Burgess Frank
Burke Charles
Burks Robert
Carlos Don
Carter, Ellis W
Clothier William H
Cohan, Ben
Cohen Sam
Crawford Lee
Cronjager Henry, Jr
Crouse, John
Curtiss Judd
Daly, James
Dalzell Arch R
Davenport Jean L
Davis Mark
Davol, Richard S
Dawes Harry
DeAngelis Louis
deCanstellaine, Paul
Deverman, Dale
Diskant, George
Dodds, Wm
Doran A Richard
Dorris Joe
Dowling Thomas L
Dugas Frank
Eagan J P
Eckert John
Etra, Jack
Finnerman, Perry
Fredericks Ellsworth
Fischer Herbert J
Flinsky Ray
Foxall William
Garvin, Edward
Gaudio Frank Jr
Geissler Charles R
Gertsman Maury
Glassberg Irving
Glouner Martin
Gough Robert J
Graham, Stanley
Greer John
Haas Walter
Hackett James C
Haddow Ledger
Harlan, Russell
Hayes Towne D
Higgins, James Colman
Hill Paul
Hoffman Roswell
Horsley, Davis S
Ivey Jesse F
Jones Edward C
Kauffman R King Jr
Kearns Edward
Keller, Alfred S
Kelley, George F
Kelly, William
Klein Irving
Kluznik Matt
Lane Art
Lockwood Paul
Love, Ceeil
Lykins Vollie Joe
Marble Harry
Marsh Herry
Martin John
Molina Lewis
Meade Kenneth
MacDonnell Stanley
McDonald Frank
McEdward Nelson C
McIntyre, Andy
Noble Roy
Norton, Kay
Orsatti, Alfred
Parkins Harry
Riley William
Ramsey H Clark
Rankin Walter
Reinhold Wm G
Roe Guy
Sanford, S A
Schuch William
Scheving Albert
Sargent, Don
Shorr Lester
Shirpser, C
Slifer, Clarence
Sloane, James
Smith, H C
Southcott Fleet
Starbuck, Charles
Stine, Clifford R
Straumer E Charles
Strong, Glenn
Strong William M
Tolmie Rod
Tripp, Roy
Ulm William R
Van Trees James, Jr
Van Warmer, John Pierce
Ward Lloyd
Weiler, John
Wellman Harold
Wendall, Jack E
Willard, Barth
Whitley William
Worth Lothrop

Still Photographers

Allan Ted
Alsop George
Anderson Bert
Bachrach Ernie
Bjerring Frank
Blanc Harry
Breau Joseph F
Bredell, Elwood
Brown Milton
Ceburn, Robert
Cooper John
Croneweth, W. E
Ellis John
Estep, Junius D
Evansmith Henry
Farrell David H
Fraker, W A
Freulich Roman
Fryer Elmer
Grimes William H
Hendrickson Fred S
Hommel Geo P
Hopcraft N John
Johnson Roy L
Julian, Mac
Kahle Alexander
Kling Clifton
Kornman Gene
Lippman Irving
List, J Z
Lobben, C Kenneth
Longet, Gaston
Longworth Bert
Lynch, Bert
Manatt S C
Marigold Mickey
Martin Shirley V
Miehle John J
Osborn Harry
Richardson G E
Rowley Les
Sibbald Merritt J
Six Bert
Tanner Frank
Van Pelt Homer
Welbourne Chas Scott

Associate Members

Mr George Cave
Mr Emery Huse
Dr W B Rayton
Mr Fred Gage
Dr C E K Mees
Dr Herbert Meyer
Mr Hollis Moyse
Dr Lloyd A Jones
Dr V B Sease
Dr L M Dieterich
Dr J S Watson, Jr

*Membership by invitation only.

Members Turn to A. S. C. Agency for Representation

BECAUSE of the wide and comprehensive representation given the cameraman member of the American Society of Cinematographers by its Agency, a large majority of the cameramen are turning to this agency for representation not only in the studios but also in their other business matters

Realizing that the professional man has not equipped himself in all instances for the conflict with the business world, the agency has set up as one of its operating forces a department which looks after the business affairs of the member, such as investments, insurance and other such things that become a part of the activity of a man with the earning power of the average cinematographer

The agency taking over these duties leaves the individual with a freer mind He is not only represented in business matters, but also his legal affairs are looked after by the legal department of this agency

Through the history of the motion picture business, the cinematographer has been the most important human unit Without him there would be no picture While the actor and the director have assumed great importance and have demanded a monetary return that runs into stupendous figures, yet pictures could be made without them, but pictures could not be made without the cinematographer.

Recognizing this basic fact, the A S C Agency is striving through its personnel and activities to bring the cinematographer to the recognition and position which his work deserves.

Also by reason of this agency a better deal can be worked out for the individual cameraman as the agency itself is in touch with, and familiar with all existing conditions The motion picture executive is conceded to be one of the shrewdest business men extant, his method of handling business is marveled at by many outside of the industry It is with this man that the professional cinematographer is asked to compete and because he has not been equal to the task he has not reached the heights he deserved.

The actor and the director recognized this fact early and brought into being the personal representative and the agency Through these forces the actor and the director have reached a position and been given a recognition in a few short years that they could not have attained by individual effort over a half hundred years

It is a recognized fact in the history of the motion picture industry that individual representation has never brought the results for the artist that he could secure by entrusting his activities to those trained to cope with situations such as are brought up by the employment of talent in the motion picture business

Recognizing these facts the cinematographer feels that the establishment of the A S C agency establishes a new milestone in the better recognition of the cinematographer in the industry



Top, taken without a filter Bottom, same scene taken with a No. 1 Diffusion Filter

Filters For Special Effects

By

George H. Scheibe
Filter Specialist

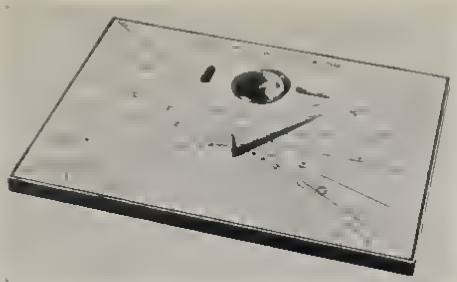
THE term 'Photographic Filter' all too frequently is used—even by technicians—to designate merely color filters While this interpretation is correct as far as it goes, it is incomplete, for it ignores the ever-growing range of Effect Filters And yet oddly enough, this latter class of filters (and they are filters in every sense of the word) are now used far more frequently than even the most popular ray screens or color filters!

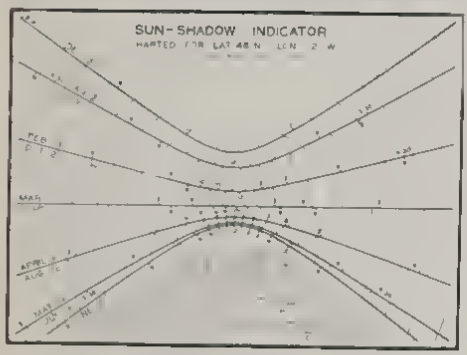
Under the general heading of 'Effect Filters' we find the many types of screens for producing diffused or soft-focus effects; fog filters, for producing the effect of fog, Neutral Density filters, graduated color or Neutral Density filters for producing special filtered effects or transitions, special filters for controlling the projection "hot spot" in background-projection process cinematography; a variety of iris-vignetters, and even the familiar monotone viewing-glass, which is a true filter in spite of the fact that it is used only visually

Without doubt the most universally used photographic filter today is the Diffusion Filter (or screen) Hardly a single scene is photographed today—either in the studio or on location—without the use of some type of diffusing screen In fully half of these scenes, the diffusion is so delicate that it is noticeable only to the trained technician, yet it is the presence of this all-but-imperceptible diffusion which is responsible for the charm, naturalness, and "quality" of modern studio cinematography To discover the reason for this, we must examine—if only briefly—the tremendous disparity between the human eye and the perfected lenses now used for photography and cinematography According to the statements of many famous oculists, the human eye is at best a most imperfect instrument, it is doubtful if a single perfect pair of eyes has ever existed Even those of us with theoretically normal vision do not perceive things with the microscopic sharpness of a modern anastigmat lens, there is always present a certain—and unusually subconscious—degree of natural diffusion Our optical engineers, on the other hand, have so perfected their lenses that even the fastest objectives now in use render an object with a far greater degree of sharpness and detail than th human eye ever perceives in nature Accordingly, the pictures made with these lenses are frequently jarring to our optic sensibilities, we see details—imperfections—the texture of skin and makeup, and so on—which detract from our enjoyment of the picture and its message Accordingly diffusion filters have been devised to delicately soften the image cast by the lens, obscuring these defects, and giving a satisfyingly natural picture without sacrifice of any of the essential characteristics of the lens—its speed, correction, and general quality In studio practice, these filters smooth out facial wrinkles, banish the flaws in makeup, and make the picture generally more pleasing Commercially, these diffusion screens are made in a number of grades, giving diffused effects ranging from the very slightest to the heaviest permissible softness The basic number of the series—No 1—gives a moderate degree of diffusion, as shown in the illustration The No 2 gives a heavier diffusion, and the No 3 an extreme softness, suitable, as a rule, only for extreme close-ups For many years, these three were ample for all needs, but of late, lighter and yet lighter screens have been demanded Therefore the No ½ appeared, giving a slight softening, then the No ¼, for very delicate effects—and most recently the No ⅛, No 1/16 No 1/32 and even No 1/64 Many famous cinematographers use one of these lighter screens for all scenes, applying heavier ones only for close-ups—and never working without a diffuser

16mm users will find the lighter gradations extremely beneficial to their camerawork, though the magnification in projection, together with other considerations of optics, film, etc, preclude the use of anything heavier than a No 1 diffuser Users of 'Leica" and "Contax" miniature cameras will find these diffusers very useful too, in making their enlargements Several users have told me that the use of a No 1/64 Diffuser on the lens of the enlarger when making big enlargements tends to minimize the grain-effect so injurious in this work

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Sun Shadow Indicator

By

R. S. Leonard

WHAT path does the sun travel daily on its annual voyage from north to south and back again? Where will it be at some particular time of day —at some particular time of year? Such questions could probably be answered definitely by only a few, certainly not without access to astronomical data, and not without a great deal of time-consuming calculation. Yet definite knowledge of the sun's altitude and direction at any given time is most intimately concerned with all outdoor photography. Not only to permit adequate exposure, but to insure light of the direction and intensity necessary for proper rendering of the subject to be photographed.

Taking pictures of a great public power development at all times of the year made the need of such knowledge increasingly apparent. Still and motion pictures were taken of all construction phases, of railroad and transmission lines, of dams and lakes, of the scenic magnificence so intimately a part and background of the development, pictures of the tremendous 1200 square mile power reservoir that makes the project possible, an area of granite gorges and glacier capped peaks. The project lies in a country so rugged that many of the most spectacular locations are in sunlight only a part of the year, at times in places so difficult of access that a second attempt was seldom possible—all this in a country of heavy rainfall and great cloud masses, of sudden weather changes and uncertain sunlight. Such difficulties prompted a search for some sort of a device for quickly forecasting the sun's position at a given time and place. Nothing seemed to be available, however, and after a certain amount of effort, the device in the illustration was produced. It has proved practicable in use and apparently quite accurate enough for its purpose.

The Sun Shadow Indicator is simple enough. Basically, it is merely a monthly charting of the path followed by the extreme shadow of a vertical post as the sun passes from east to west. The seven curves on the chart follow the shadow path of the day and month indicated on the respective curve. Intermediate days between these monthly curves are obtained with sufficient accuracy by interpolation. It would be more confusing than helpful to show very many of these curves, so only seven have been charted. The extreme curves of December and June mark the limit of sun travel north and south. Each of the other curves serves for either of two months because the sun naturally follows the same daily path at a given altitude, whether moving north or going south with the seasons. Because of the elliptical path traveled by the earth, however, the hourly time divisions for each month will not coincide. The curve of March 21st and September 22nd is a straight line because at that time the sun is over the equator.

The concentric circles are multiples of the post height and provide a ready means of estimating the length of the shadow in terms of the post height. For instance, in the illustration the shadow is in a direction that indicates three o'clock on or about June 21st, and the length of a sun cast shadow at that time is 4½ times the height of the object causing the shadow.

A magnetic compass is inset in the chart so that it may be properly oriented with the sun. Spirit levels are also included so that the chart may be held level and the correct length of the shadow indicated.

In use, the shadow indicator is leveled and turned until the compass needle is over the north point. It may be held in the hands, or placed on a tripod head or similar support. The sun need not be shining to obtain the shadow direction, but the presence of a magnetic deflection can be determined by a comparison of actual time with time indicated by shadow.

With the indicator properly leveled and oriented, a visual comparison is made between the post with its cast shadow and the object to be photographed. This visual comparison is the basis on which the practicability of the whole idea rests. In practice, the comparison method seems satisfactory, and it has been found that good results can be obtained with distant as well as close-up subjects.

The most desirable direction of light is then decided upon and the shadow length and the time of day at which it will occur is found on the chart. If proper shadow length and direction would not occur on that day, it is quite easy to determine if some other time of day would be more suitable. It has been found in practice that the indicator may be used in a ravine or in the shadow of obstructing objects such as mountains or buildings, and the time and duration of possible sunlight determined. Used in building interiors where photography may be involved with sunlighting through windows, it will indicate the time, direction, and extent of sunlight penetration. Laid on building or construction plans, it is possible to determine with reasonable accuracy the proper time to photograph a subject without need of preliminary inspection by the photographer.

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Cinematic

SEVERAL basic improvements are to be noted for the year 1933, but their general adoption has been in almost every case deferred until more propitious economic conditions return. The majority of advances have been in details of equipment and practice—improvement of that already at hand, rather than the acquisition of anything radically new. None the less, much progress can be chronicled for the year 1933.

Cinematographic Methods

In virtually all of the studios, one camera per set has become standardized, with added cameras being used only rarely. At the same time, production schedules have been, in several instances, materially reduced. A feature-length, programme picture which but a few years ago would be allowed a shooting schedule of thirty days or more is now generally scheduled for eighteen days or less (12-15 days in one major studio)—and not infrequently completed considerably under the schedule. This has naturally brought about a somewhat greater efficiency in operation, though at the excessive price of absurdly long working hours, unduly great physical and nervous strain on the personnel, and the slighting of many important elements of really fine cinematography. It is noteworthy that the films held to be the most successful have generally been those allowed longer, more reasonable schedules, avoiding excessive overwork.

Relatively few changes in actual photographic methods have been observed, the bulk of advancement being detail improvements in equipment, etc.

Influence of Foreign Elements

Technically, the influence of foreign elements during 1933 proved negligible, although two releases ("Be Mine Tonight" and "The Private Life of Henry VIII") have influenced the trend of production to some extent.

The Dunning Process Co., of Hollywood, introduced a European method of 'Matte-ing' films, to remove scratches on valuable negatives.

Raw Materials

Virtually unchanged. The standard negative material is the SuperSensitive Panchromatic type, non-halation backed, and largely of Eastman and DuPont manufacture. Similar emulsions, slightly slower, but of unusual fine-grain characteristics, have been introduced by both firms for the making of transparency background-plates. Infra-red-sensitive film has also been made available, this was used by Elmer G. Dyer, A.S.C., in making what have been held to be the finest aerial night-effect scenes made commercially, in M-G-M's "Night Flight."

The use of tinted-base positive stock has made some gains in the past year, especially in "Zoo in Budapest" and "I Am Suzanne" photographed by Lee Garmes, A.S.C., and in some of the films photographed by Victor Milner, A.S.C., and Hal Rosson, A.S.C.

Sound-track or "recording" positive emulsions, coated on 16mm stock, have been made available to the amateur trade giving a moderately fast, semi-chromatic film at a greatly reduced price. This is largely of DuPont manufacture, but marketed by several laboratories, who handle the reversal processing of their film under the trade-names "Pellex," "Sun-Ray," "Rod-Al," etc.

Cameras

Both Mitchell and Bell & Howell have introduced silent cameras which have been tested, and used to some extent on productions. Though quite successful, economic factors have retarded their general acceptance. The French-made Debrie "SuperParvo" silent camera has been shown in America, while both the Debrie and Eclair silent designs have been used quite extensively in Europe.

Several improvements in blimping have been introduced, notably the Fried design, which consists of a standard Bell & Howell or Mitchell camera suitably silenced, and rebuilt as an integral part of a small, lightweight blimp, and the RKO type, described elsewhere in this issue. The Educational-Fearless blimp has been made commercially available.

In the amateur field, Eric M. Berndt, of New York City, has designed and marketed a custom-built, professional-type 16mm camera, embodying virtually all the features of a studio camera, and adapted for sound-recording, by either single or double system.

The Eastman Kodak Co. brought out the Cine-Kodak Special, a virtually professional camera for advanced 16mm workers. It is capable of hand or motor drive, at any speed from single-frame to 64 frames per second, forward or reverse, and fitted with direct focusing, a two-lens turret, matting facilities, dissolving shutter, and an interesting magazine arrangement, somewhat reminiscent of the Akeley principle, for 50, 100 or 200-ft. lengths of film.

Bell & Howell introduced a semi-professional Eyemo and Filmo, featuring a range-finder, optional hand or electric motor drive, and detachable, external 200-ft. magazines.

Victor has added a (hand) reverse-crank to their DeLuxe Model 5" 16mm camera, and with the continuance of the "Model 3" type, made notable advances in the low-price class.

The magazine (or "charger") type of amateur cine camera has gained in popularity with the success of the 'Simplex' and the introduction of the new "121" magazine-type Filmo. The magazine plan has incidentally minimized one of the commercial evils of the 16mm film trade—the wastage of "short ends"—lengths of 40-50 ft., which can now be used as loads for the magazines.

The 8mm standard has made great progress during the year, two types of equipment being available in this standard (Eastman and Stewart-Warner), with a considerable variety of equipment and accessories.

Camera Accessories

An outstanding development in the line of professional accessories is the introduction, by Harrison and Harrison, of a positive-type view-finder matched to 24mm lenses. The same firm has also introduced a professional type, positive-lens view-finder for amateur use.

There has been a notable increase in the use, by professionals and amateurs alike, of photoelectric exposure-meters. Several new instruments of this type, including the Weston, have been marketed.

Several studios—notably MGM, RKO and others—have developed finders which are mechanically connected with the focusing adjustment of the camera lens, automatically correcting for parallax. Some designs focus the finder-lens synchronously with the camera-lens, often this adjustment is provided with compensating elements which keep the finder accurate regardless of the focal-length of the camera-lens used.

The Bell & Howell "Rotambulator," adapted from a design by John Arnold, President A.S.C., has come into general use in several studios in place of tripods, dollies or light cranes.

The Fox Studio introduced the "Velocilator," a very fine small crane for general use. It is being manufactured under license by the Fearless Camera Co.

General Service Studios have developed a fine large crane, one of the two largest in the industry, and interestingly designed. One man can operate it, as the counter-

Progress During 1933

A Technical Review

weights are sliding rather than fixed, and assure very accurate balance It is designed to be transported as a trailer

Lenses

Professional lens-speeds have remained fairly constant, varying between f 2 7 and f 2 3 The Astro "Tachon" lens, f 0 95, has been shown within the year, and tested by members of the A S C Research Committee, in both the professional and amateur mountings The visual and chemical foci are rather divergent, so it has not been possible, as yet, to calibrate these lenses with sufficient accuracy to take advantage of their undeniable speed and good optical quality

The German camera firm, Askania, G m b H, has introduced a mirror-lens, a telephoto on the principle of the reflecting telescope

The Bell & Howell "Varo" variable-focus or "Zoom" lens has been used considerably on production

Lighting

Incandescent lighting has remained in the ascendant, although the carbon-arc remains supreme for certain light-effects, and for natural-color cinematography

The General Electric Co has developed large bulbs of the Photoflood, high-intensity type, for studio use These are known as the 'Movieflood" and are similar to the usual 1,000 Watt, PS-52 bulbs, but deliver approximately 100 per cent more light, though with a rather shorter life, averaging 15-18 hours The chromatic composition of the light from these bulbs is considerably improved, with an increase of 140 per cent in the actinic (blue-violet) region, and an almost corresponding reduction in the infrared or heat emanation, which is of no photographic value These units are excellent for monochrome cinematography, having notably improved "carrying power ' They were, however, designed primarily for natural-color cinematography

The National Carbon Co , in conjunction with Mole-Richardson, Inc , of Hollywood, have developed new Super-Panchromatic carbons for arc-lighting both natural-color and monochrome cinematography, and new lighting-units of greatly improved efficiency for their use

Kliegl Bros , of New York, have also introduced several improved incandescent lighting units, now undergoing tests

In the amateur realm, the regular Photoflood bulb, together with new, extremely low-priced lighting units for use therewith, have greatly increased the interest in indoor movies and stills

A new professional diffusing screen, for studio lights, has been introduced by B M Bodde of Hollywood, who claims for his device the softness of a silk" with the translucency of an oiled gelatine diffuser In addition the new diffuser is said to be heat-proof and waterproof

Trick or Process Cinematography

The transparency, or projected-background process has virtually eliminated the color-separation transparency methods of producing composite shots Several interesting developments in this connection have occurred including the introduction of several types of cellulose-acetate screens Earlier in the year the Sidney Saunders cellulose screen was announced and most recently the Bodde type, which is fireproof, and partially polarizes the projection beam It is said to correct the projection "hot-spot' markedly, and to minimize grain

These screens, together with improved design of the optical units of background-projectors, have permitted the use of vastly larger screens There have been some experiments with filters, fitted to the projector, for controlling the hot-spot Several portable background-projectors, including that of George Teague, of Hollywood, have been placed in operation, greatly increasing the flexibility of the process

Dr L M Dieterich, A S C , invented a new color-separation composite process, embodying different principles than those heretofore used

Several films released by RKO have had unusual displays of trick transitions, made on the Optical Printer by Vernon Walker, A S C , and Lynn Dunn A S C Among these films are ' So This Is Harris, ' Melody Cruise" and "Flying Down to Rio '

Natural-Color Cinematography

Technicolor s three-color process has been used for over a year in making Walt Disney s "Silly Symphony" cartoons, and has caused a marked trend to color in animated cartoons The three-color Technicolor has also been used on feature productions, for sequences from "The Cat and the Fiddle" (MGM) and "Rothschild" (20th Century) with good effect The process, while still in the development stage, shows considerable promise, especially as the lighting technique is mastered

Cinecolor has announced several improvements in processing methods for two-color, bipack processes

The Dunning Process Co , of Hollywood, has successfully reduced a number of 35mm two-color subjects to 16mm using duplitized 16mm positive stock Negatives of all types—Technicolor, Multicolor, Magnacolor, Cinecolor, and even Prizma and Kinemacolor—have been utilized

Stereoscopic Cinematography

A good deal of experimentation has been quietly carried on in this direction, both independently and under the wing of various studios Little, however, has been announced regarding these experiments, though it has been rumored that at least one of these systems is shortly to be tried out on a feature production

Television

As outlined elsewhere in this issue, a good deal of experimentation in Television has taken place, with results that are technically gratifying but which indicate that commercial television is as yet rather far in the future

Film Standards

Wide film, a subject of much consideration a few years ago, has apparently vanished from view Were economic conditions more favorable, it might well commend itself for process-background use, however, since the equipment for it still exists

At present, there are in America three recognized film standards the professional standard, 35mm, and two amateur standards, 16mm, also used in industrial and educational use, and 8mm, a purely amateur standard created by slitting specially perforated 16mm film lengthwise (after development), and projecting as a narrow strip with but a single set of perforations Great economy is possible by this method judged on a basis of equivalent screen time, a saving of 66 2/3 per cent over 16mm is noted, and approximately 91 2/3 per cent over 35mm

In Europe, in addition to the familiar 35mm and 16mm standards (8mm is only now being introduced in such regions as Great Britain) there are two other standards The Pathe-Rural, of France, intended primarily for village cinemas and industrial work though lately made available to some amateurs, uses a film essentially similar to 16mm

(Continued on Page 494)

Featherweight Blimp Has Many Innovations

By

Henry William Gerrard, A.S.C.



New RKO Featherweight Blimp, opened. The finder-tube is folded down to allow opening of door, directly above note focusing control and dial.

FOR the past month, I have been privileged to use a new and really modern camera-equipment in the photographing of my latest RKO production, "Of Human Bondage."

Essentially, the new device consists of a standard Mitchell camera, rebuilt as an integral part of an unusually light soundproof housing, and designed in such a way that the case need be opened only for loading All normal operational procedure—focusing, adjustment of lens and shutter, etc —may be carried on entirely from the outside The finder system, while in many ways similar to accepted current practice, in which the finder is automatically corrected for parallax, has been developed to a high degree of perfection The new outfit weighs but 116 lbs loaded and ready for use It may be used, if necessary, on an ordinary silent-picture tripod and carried about the studio as easily as a silent-picture camera

The camera used is a standard Mitchell, equipped with a silenced speed movement The forepart of the camera, including the turret, lens-mounts, etc , is eliminated, and only the actual camera-box and the base upon which it slides are used This is fitted into the Blimp in a semi-permanent mounting, with an accurately made front plate —an integral part of the blimp—replacing the portions of the original camera which have been removed The rest of the blimp consists of a hardwood frame, built up from an insulated metal base-plate, lined with the usual sound-absorbent materials, and covered with leather This casing is shaped to conform to the contours of the camera, the upper quarter opens for insertion of the film-magazines, and the panel opposite the camera-door, on the left-hand side, opens for threading A door, fitted with an inspection-window, is provided beside the takeup pulley, and another at the rear of the motor

At the rear, windows are provided through which the footage-meter and the shutter-aperture indicator may be observed The regular Mitchell focusing-tube connects with an eyepiece extended through the back of the blimp case, as is the throw-over lever Two buttons beneath the eyepiece control the blue and "pan" viewing filters in this focusing system, while to the right of the ocular are similar buttons which control the shutter setting, etc., and permit making fades in the camera A spirit-level is built into the housing, and all dials, etc , are illuminated

In front of the case is mounted a rebuilt standard matte-box The bellows has been eliminated in favor of a short tube, which fits directly into the lens-mount The matte-box supporting arms are mounted upon a bracket which is in turn hinged to the camera-housing, so that by the operation of a simple release, the entire assembly may be swung to one side, out of the way

Undoubtedly the greatest advances in the design are found in the lens-mounting and the finder system, which are interlocked The turret, as has been mentioned, is eliminated in favor of a single lens mount The lenses are mounted in special barrels, which fit interchangeably into this mount They are so designed that they cannot possibly be inserted incorrectly A system of cams is provided so that a single set of focus-calibrations is accurate with all lenses, and the automatic adjustments of the finder, which correct for focus and parallax, are also accurate for any lens

The finder, which is mounted, as usual, beside the camera, on the left-hand side of the case, comprises two units the finder proper, and a dial engraved with the focusing calibrations This dial is placed directly above the finder, and is equipped with a light, enabling the calibrations to be read more easily, and an adjustable mirror so that the indicator may be read from behind the camera

By means of a large knob, located directly below the indicating dial, the finder is automatically focused and corrected for parallax in one operation, the same operation automatically focusing the camera-lens By means of a specially designed system of cams, this operation is accurate regardless of the focal length of the lens being used The finder tube is hinged midway of its length, and folds downward, giving ample room for the opening of the camera and blimp doors for threading

In actual operation, this new-day optical system works as follows By means of the single knob controlling the camera-lens and finder, the picture may be focused in the usual manner on the regular ground glass focusing screen of the Mitchell focusing system, or, alternatively (and often with far greater accuracy and satisfaction) the camera may simply be centered on any desired object in the picture, by observation through the focusing-tube Then attention is transferred to the finder by means of the focusing knob, the finder is simultaneously swung and focused so that the desired object is centered in the finder, when this is done

(Continued on Page 496)

For Three Years

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EASTMAN Super-sensitive "Pan" led the way into the amazing field of ultra-speed motion picture photography. That was three years ago. At no time since then has this Eastman film faltered in its leadership. Producers and cameramen today find that it is as closely linked as ever with the outstanding box-office triumphs...with the finest and foremost in cinematography. Eastman Kodak Co., Rochester, N. Y. (J. E. Brulatour, Inc., Distributors, New York, Chicago, Hollywood.)

EASTMAN *Super-sensitive*
Panchromatic Negative

Sun Shadow Indicator

(Continued from Page 489)

The indicator may also be used on geographic maps to compare sunlight direction with geographic features

The effectiveness of exterior architectural detail and design is usually dependent upon its relation to predominant sunlight direction Residence design is very much concerned with sun exposure and sunlighting of interiors Factory and office buildings must be based on the maximum utilization of sunlight The Shadow Indicator should prove a time-saver in determining the sun's position at definite or at average times throughout the year, and in work of this nature could be used as a simple chart, without compass or levels

The device has one very decided disadvantage, however it must be used within a reasoable distance of the position for which it was charted, although with care and the proper allowance for time and distance, the chart in the illustration could be used for the entire state of Washington Areas where a considerable amount of outdoor photography is carried out should justify the production of a chart for that district

The device has been invaluable in the particular use for which it was designed Here are a few recent instances The camera position for one picture was several hundred feet above a lake, facing south, and with a background of snow-covered mountains The sun was moving across the sky, almost into the lens, and the snow-covered mountain side facing the camera was in shadow The immediate problem was to determine if the sun would rise high enough to illuminate the snow fields and keep out of the lens A quick reference to the Shadow Indicator gave the sunset position and showed that the time of year was too early to expect sunlight on the snowfields, and so the picture was taken without loss of time A suitable time for a picture to be taken later was also determined At another time, the camera position was on a hillside facing north and looking directly into a canyon, which at that time was in shadow Reference to the Indicator showed that the canyon would be cleared of shadow in an hour, so the set-up was made In still another case, a dam was to be photographed from a point below, and maximum brilliance of the water tumbling over the spillways demanded as nearly a horizontal sunlight as possible It was doubtful if late sunlight would illuminate both spillway water and gorge, but the Indicator gave the time of day and year when both conditions would exist

The following is an instance of almost invaluable aid, a position was to be determined for a permanent motion picture camera mounting for progress records of the construction of a great dam These shots were later to be assembled to show the complete construction in a short space of time—a very difficult task at best Average sunlight direction, penetration of sunlight to the gorge and dam foundations, and desirable light direction for photography were allobtained by reference to the Indicator

Undoubtedly these cases are common problems and it is hoped that the Sun Shadow Indicator may help others in their solution In outdoor motion picture photography, where sets must be constructed some time in advance of actual picture taking where camera and equipment set-ups must be planned or made in advance, or where the choice of outdoor locations is definitely related to sunlight, the device may be of assistance

A.S.C. To Hold Golf Tournament

The First Annual A.S.C. Cameramen's Golf Tournament will be held at the Hollywood Country Club on Sunday, April 8. All cameramen are eligiblo to enter the tourney, which consists of 18 holes of Medal Play. A large number of prizes and trophies are promised, including a perpetual trophy emblematic of the Cinematographers Golfing Championship.

The Tournament Committee includes Elmer G. Dyer, Chairman; Karl Struss, Allen Seigler, Ernest Haller, George Folsey, Richard DaVol, Norbert Brodine, Bernard McGill, Joseph Valentine and Fred Gage.

The Trophy Committee consists of President Arnold, of the A.S.C., Edward O. Blackburn, Wesley Smith, George Schneiderman, Gaetano Gaudio, Virgil Miller, Edward Cronjager, Charles Stumar and J. G. Van Trees, Sr.

Entry blanks will be available at the Society's offices, 1220 Guaranty Building and in all studio camera departments. They should be filled out and filed as early as possible, either with the studio's Camera Executive or at the offices of the Society. The Tournament Committee urge that all entrants state their average score, with whom they prefer to play, and the preferred starting-time. In so far as is possible, the foursomes and starting times will be arranged in accordance with these expressed preferences

Play will start at 8:00 A.M., with the foursomes starting at ten-minute intervals thereafter. The Green Fee is $1.75, which includes lunch and shower and locker privileges. Entrants may practice on the course at any time previous to the tournament; the fee for this is one dollar.

Cinematic Progress in 1933

(Continued from Page 491)

but of a width of 17 5mm Another French system, also introduced by Messrs Pathe, and for exclusively amateur use, is the "Pathex" 9.5mm standard, distinguished by a most economical utilization of the film-area, the perforations are single, and in the centre of the film, between the frames This standard is said to be even more popular than 16mm throughout Europe It partakes of the economies of the 8mm system

Sound

During the past year the Western Electric "Wide Range" and the RCA-Victor "Highest Fidelity" systems of recording and reproduction have come into general use They give a considerably wider response range in both recording and reproduction, with better quality and more natural sound

Western Electric has developed a new light-valve, with one ribbon more highly damped than the other, giving a more uniform response, and a clearer record

In the independent sound-equipment field, hitherto dominated entirely by glow-lamp equipment, several light-valve recorders (including the Fearless) have appeared

Sound-Films, Standard and Substandard

The split-film method of sound recording is being widely used It is essentially similar to the amateur 8mm principle, involving the use of normal 35mm sound-track positive film for the record, with tracks made first along one edge, then the other After development, this is slit longitudinally, and the accepted takes are segregated for printing

In other studios (notably RKO) a system of preselection is employed Only the accepted takes are developed The rest of the film is either reversed, and used anew for recording, or reclaimed, if this is impractical

Dr J G Capstaff, of the Eastman Kodak Co, recently patented a method of producing tinted-base positive stock in which the sound-track area remains clear This is done by removing from this area the material of the film-base to the depth of the dye-effect, subsequently filling the groove with a protec tive, insoluble varnish So far as is known, this method has not been introduced commercially

16mm sound-on-film has become rather definitely standardized in America to the RCA-Victor dimensions, standard 16mm film, perforated on one side only, with the opposite area used to carry the sound-track

In Europe, on the other hand, several substandard sound-on-film dimensions are used The Pathe-Rural (17 5mm) system is except for film-width, identical with the RCA-Victor 16mm standard The British Thompson-Huston Co (B T H) and Tobis, of Germany, both

employ a standard which is virtually a complete overall reduction of existing 35mm sound-on-film. standard 16mm film, perforated on both sides, with the sound-track between the left-hand row of perforations and the narrowed picture-area Will Day, in England, has suggested the possibility of putting a sound-track on 9 5mm film, using a narrowed picture, and a track whose striations are at an angle of 60 degrees to the longitudinal axis of film and track

No great degree of outward progress has been made in direct recording of 16mm sound-films One equipment—the custom-made Berndt outfit already mentioned—is available, and uses either glow-lamp, light-valve, or oscillograph recording, on the RCA-Victor standard track The bulk of substandard sound-on-film, both here and abroad, is recorded on 35mm film, and reduced by re-recording

Re-Recording or Dubbing

The most interesting developments in this line, aside from the methods and equipment used here and abroad for re-recording from 35mm to 16mm or 17 5mm, is the Reagan-Day method of re-recording or synchronizing foreign-language dialog As recently described in the AMERICAN CINEMATOGRAPHER, this process involves the use of special close-ups, in which the actors speak coded lines, using English words, but giving lip-movements synchronizing with the required foreign-language dialog Thereafter, properly synchronizing foreign-language sound-tracks are made, and synchronized with the picture by means of an ingenious synchronizing machine developed for the process

Sound on Disc

This, the form of the original Vitaphone, to say nothing of the earlier, unsuccessful experiments such as the Powers Cameraphone of 1912 and the original Edison Talking Kinetoscope of 1895, has lapsed into desuetude It is virtually unused in professional practice, despite the introduction, by Western Electric, of an improved recording system using Vertical Cut records It is little used, even, in substandard practice A good deal of equipment for amateur disc recording is available in England, however, where many amateurs seem yet to be experimenting with the method.

Projection

No outstanding improvements in professional equipment or methods have been noted, in fact, quite the reverse, as the depression has impelled many exhibitors to economize excessively in their projection-booths, reducing the amount of light used, the crews, etc , and overlooking many needed repairs It has been stated that this condition is costing distributors in the Los Angeles territory alone over $1,000 per week in replacements of damaged prints, and that a print which should normally have a life of 15 to 20 consecutive engagements now have a live of less than five such runs

In the amateur realm, there has of late been a very considerable increase in the power of the projection lamps used in 16mm projectors At the introduction of 16mm, eleven years ago, the average lamp was but 150-200 Watts, with the largest only 250 Watt A year ago, roughly, 350 and 400 Watt units were introduced Within the past year, 500 and even 750 Watt lamps, with forced ventilation, etc , to protect the film, have come into use, an increase of over 300 per cent This power permits projection upon even theatre-size screens (15-18 feet wide) with truly professional results.

Several manufacturers—notably Bell & Howell and Victor—have introduced excellent 16mm sound-on-film projectors, using the RCA-Victor standard film, and easily adapted to projecting silent film, as well

At least two European firms (Bolex-Paillard and Siemens) have introduced projectors using 16mm, 9 5mm, and 8mm interchangeably

Laboratories

There has been noted a considerable improvement in the quality of the out-

The new 48-speed Eyemo

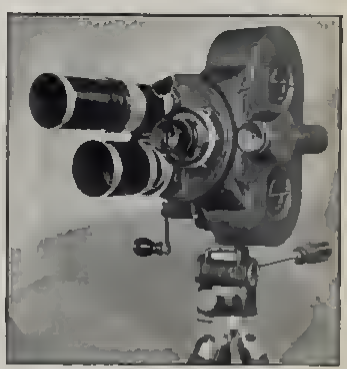
gives the highest speed available in a portable 35 mm. camera

The new 8- to 48-speed Eyemo 35 mm hand camera, developed to permit taking pictures at twice sound speed, is now available on order.

This convenient, versatile camera has already proved its value to Martin Johnson, who is using it for filming big game from the air. It will be a boon to any cinematographer who has to produce semi-slow motion scenes under circumstances which make the use of a studio camera difficult or impossible Its speed range, 8 to 48 frames per second, gives it general utility.

Known as Eyemo 71-CD, the new model has a three-lens turret head mounting the Cooke 47 mm F 2 5 lens, standard equipment and any two extra lenses selected from the Cooke line, ranging in focal length from 24 mm to 20", and in speeds as fast as F 2 There is a hand crank for optional use, and a 12- or 110-volt electric motor may be employed. The governor gives accurate control of any desired speed, whether spring motor, hand crank, or electric motor supplies the power Model 71-CD, like 71-C, may be adapted to use external 200- or 400-foot magazines

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The Dunning Process Co and the laboratory of the DuPont Film Mfg Co 's factory have both standardized on a modified paraphenylene-diamine developer for fine-grade development of 16mm negative, with excellent results

Art Direction

The year has been marked by an influx of art-directors from the stage including Willy Pogany, the late Joseph Urban, Robert Edmond Jones, etc , and by the invention by Henri Coulon, of an interesting machine for scientifically matching the colors for costumes, settings, etc

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Trick Optical Printing

(Continued from Page 487)

was used effectively to introduce the characters in Flying Down to Rio ' Fig 19 is another adaptation of the same matte used for Fig 17 Figures 20 and 21 show a simple but effective use of the common straight-edge matte This effect is easily made by wiping-in in a different direction than that of the wipe-out Although rather mechanical, the result is, however, quite smooth and flowing In Hips, Hips Hooray," various forms of this type of wipe were used The most commented-on type of effect we have made recently is the so-called "card wipe," Fig 21, used in ' Flying Down to Rio ' This was developed for a series of scenic shots of Rio de Janeiro, in an attempt to get over the idea of viewing a series of picture-postcards A special device was designed for these effects, and it was necessary to do a great deal of careful planning before making the shots

Fig 22 is an example of how Optical Printing can save many dollars for the studio In filming "Ace of Aces," Richard Dix s crashed plane was supposed to burst into flames just as he climbed out of it and reached the ground It so happened that the plane did not flare up until Dix had crawled along the ground and out of the picture The scene was up for a retake, naturally involving quite an expenditure, when we thought we would try a little 'doctoring' on the printer—to see if we could save the scene We made a test, dissolving to a split-screen around Dix at the moment he touched the ground In this split, we dissolved the action of the plane ahead about twenty feet, to the point where it burst into flames, while Dix's action continued on normally The experiment was successful, and our 'doctored shot was cut into the picture, saving an expensive retake At another time, in ' Flaming Gold, ' an objectionable name was noticed on an oil truck moving into an important scene The Optical Printer was called on to "retouch" this scene By means of a fine grease-pencil mark on a glass placed in front of the printer aperture, the name was blurred enough to prevent recognition This glass was slid along frame by frame, to match the movement of the truck Jobs of this type present themselves regularly

Many odd and interesting problems are presented to the Trick Department of any studio Some are extremely difficult, and tax the ingenuity of the Department's personnel to the utmost During the five years of my experience with the RKO Trick Department, it has been a pleasure for me to work on the problems to which I have been assigned due to the full co-operation of all its members, and the entire confidence that Vernon Walker, A S C , the Department's Head, has in his associates That trust, together with his method of giving full credit where credit is due, has built around him a smooth-running and efficient department His own professional ability, too, has won him not alone the homage of others, but the sincere respect of his co-workers in his department The quality of Optical Printing, variety of special effects, and efficient mechanical design and operation of the printer are by no means a one-man achievement a world of credit is due Cecil Love, A S C , my assistant, and Bill Leeds, the designer of the printer and its accessories The mechanical developments on the printer and the high standard of Optical Printing it turns out are certainly not the products of one brain, and to these men rightfully goes a large share of the credit for the high standard of work turned out by the RKO Camera Effects Department

What the future holds for Optical Printing is hard to say, but as studio executives become more familiar with its artistic and money-saving possibilities, as outlined herein, I feel assured that they will take more and more interest in this branch of trick photography Inevitably Optical Printing and Optical Printer Specialists will gain higher and more general recognition than they now enjoy

Featherweight Blimp Has Many Innovations

(Continued from Page 492)

the camera-lens is also focused upon that object, with microscopic precision, and an accurate reading is also seen on the focusing dial above the finder

Changing of lenses is simple the focusing control is brought to the ' infinity" position, the matte-box swung aside, the lens is given a quarter-turn, and removed Similarly, no lens may be inserted unless the focusing mechanism is in this infinity position, and lenses may only be inserted right-side-up The lens mounts are so designed that they automatically select the proper cams to coordinate the focusing mechanism with the focal length of the lens being used

The new device was completely designed and built in the RKO studio camera machine-shop Credit for the design is given to Harry Cunningham, Head of the Camera Machine-shop, who worked in close cooperation with William Eglinton, Head of the RKO Camera Department, and Richard S DeVol, A S C , his assistant

Glennon to Fox for "Grand Canary"

• Bert Glennon, A S C , has been assigned to direct the photography of the Fox film, "Grand Canary "

Filters For Special Effects

(Continued from Page 486)

Second only to the family of diffusers is the group of Fog Filters. These produce natural fog-effects under any condition. The No. ¼ stimulates atmospheric haze or mist, the No. ½, a very light fog, the No. 1, a light fog, the No. 2, a medium fog, the No. 3, a heavy fog, and the No. 4 a real London fog! The No. 5, a graduated fog-filter, is often used for cinematographic work, especially street scenes.

These filters do not increase the exposure, and (especially the first three), they may be used at night. In fact, the first of these filters which I made, nearly twenty years ago, gave a night fog effect when a natural fog failed to make any photographable impression!

These fog filters are also excellent for use in photographing backgrounds for Art-titles.

The Neutral Density filters for subduing glare and strong contrasts, are too well known to require more than mention. They may also be obtained in graduated types which are very useful. Several miniature experts use these graduated Neutral Density filters on all their miniature shots.

Ordinary graduated filters, graduating from either clear or very lightly-tinted glass at one end to a heavy tint at the other are equally familiar. Made graduating from one color to another, as from yellow to orange, or from orange to red, they are highly useful in making night and moonlight shots. Several cinematographers have had special filters made, graduated from the green of the 56-B or the X below to a 25-A above. These produce startling effects in the desert, with a highly-corrected sky and a soft foreground.

I have made special filters of this type for the production of some interesting special effects. In the Fox picture "Happy Days," a few years ago, a sequence required that a group of minstrels should change suddenly from normal white men to blackface makeup. This was done by using a bluish-grey makeup, and a long, graduated filter, clear at one end, and a fairly heavy red at the other. Shooting through the clear end, the makeup photographed white, pulling the filter down until the lens was covered by the red end, the blue makeup slowly changed to black. A similar filter enabled another cinematographer to quickly transform an old man into a youth: the aging lines were drawn in blue, which, through the red filter, photographed dark, pulling the filter out until the lens was behind the clear area, the blue lies faded out, and the man became young.

Lastly, the monotone filter—or viewing-glass—is a filter for the eye, not for the camera. It is used in judging photographic light-values, showing highlight, shadow and colors in terms of black.



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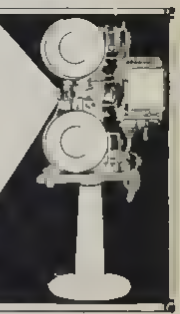
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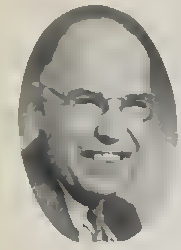
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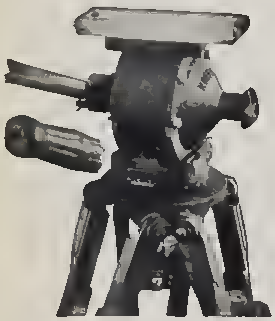
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and-white and halftone They are available for both Pan, SuperPan and Ortho emulsions It is often possible to estimate filter-effects by slipping a filter in front of this viewing-glass, and thereby getting an approximate idea of the degree of color-correction you will get with that filter, under prevailing conditions

New Lamp Diffuser

• The announcement of a new studio lamp diffuser by the Organic Reclamation Corporation of Hollywood holds considerable interest for the cinematographer in view of the fact that this announcement is accompanied by a test conducted by them by a member of the American Society of Cinematographers

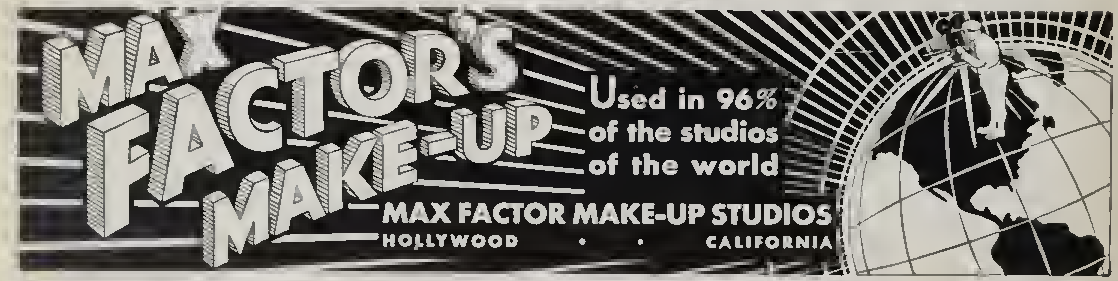
This diffuser is claimed to give the same degree of softness as silk with very little loss of light The following readings were secured on a Weston Exposure meter for the various types of diffusers employing a 1000 watt lamp with readings taken in each instance at 8 feet

Without Diffuser	320
Oiled Gelatine	200
Cello Glass	100
Silk	70
Organic Diffuser	250

These readings would indicate an economy of light, with a maximum of diffusion for the Organic Diffuser The announcement states the diffusers are made in all sizes.

Jackman to South Seas

• Fred W Jackman, former President of the American Society of Cinematographers, and Director of Scientific Research for Warner Bros -First National, has sailed on the 'Tatsuta Maru" for a four-months' cruise of the South Seas Jackman, Dean of Hollywood Trick Cameramen, signed a new long-term contract with Warner Bros before leaving, and will combine business with pleasure on the trip, photographing special background scenes for the studio throughout the voyage His itinerary embraces Japan, China, the Philippines, Indo-China, Java, Bali, New Guinea and the Solomon Islands, New Zealand, and Australia He is accompanied by Mrs Jackman and his son, Fred H Jackman, Jr, A S C, and his wife, and Joe Jackman, another son



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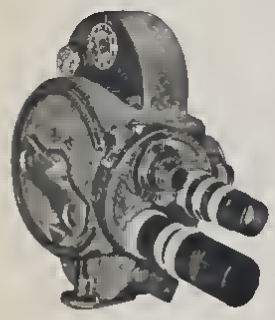
WITH the new Filmo 121 Camera, you can switch from regular monochrome film to Kodacolor or super-sensitive pan any time you want to. Magazine loading results in this convenient, film saving flexibility—eliminates the need of a darkroom for changing unfinished films. Just pull out one magazine and slip in another. No threading of sprockets!

■ The Filmo 121 oscillating focal-plane shutter gives perfectly uniform exposure over the entire picture area. This is absolutely necessary for good monochrome results, and is *vital* for successful Kodacolor pictures.

■ Any Filmo 75 Camera lens fits the Filmo 121 Camera. Any Filmo 70 Camera lens can be used by employing an inexpensive adapter. So, as an 'assistant' camera, the Filmo 121 will take every Filmo lens you now own. Regular equipment with Filmo 121 is the fine Cooke 20 mm. F 3.5 universal focus lens. It may also be had with the Cooke 1" F 1.8, fine for both monochrome and Kodacolor.

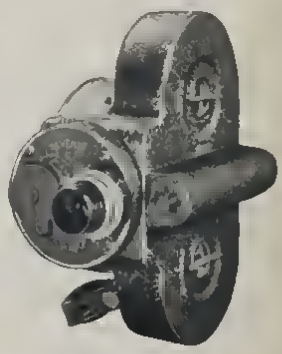
■ Filmo 121 is the 'handiest' camera you can imagine. It weighs only 37 ounces, and is small enough to slip into a coat pocket. It has both spyglass and waist level viewfinders, the former showing the fields of 20 mm., 1", 2", and 4" lenses. There are two speeds, normal and 24. The starting button gives you movies or single frame exposures (for animation work). A comprehensive exposure guide is built into the camera's side.

■ Go to a Bell & Howell dealer today and get your hands on this new Filmo Camera. And when he tells you it's only $67.50, take his word for it! We'll mail literature if you like.



The Filmo 70-D Camera. The Filmo 70-D offers a three-lens turret head so that you can vary your speed and telephoto lenses always on the camera, ready for instant use. Seven film speeds give the finished picture [illegible]. Unique [illegible] spyglass viewfinder shows the exact field in all distances. Variable [illegible] the picture's exposure automatically. Optional equipment [illegible]. With Cooke 1" F [illegible] Sesame-locked case [illegible] up.

The Filmo 70-E Camera. Film speeds 8 to 64 frames a second and the Cooke 1" F 1.5 speed lens in its single lens turret make Filmo 70-E a camera with which to conquer photographic extremes. Perfectly exposed movies are possible under the most adverse light conditions—a feat usually reserved for very expensive equipment. In making color movies using Kodacolor equipment, Filmo 70-E gives results of startling fidelity and beauty. With Sesame locked case, $185. With F 3.5 rather than F 1.5 lens, $150.



BELL & HOWELL **Filmo** PERSONAL MOVIE CAMERAS AND PROJECTORS

Bell & Howell Company, 1918 Larchmont Ave., Chicago; 11 West 42nd St., New York; 716 North La Brea Ave., Hollywood; 320 Regent St., London (B & H Co., Ltd.). Established 1907